

# THE IRON AGE

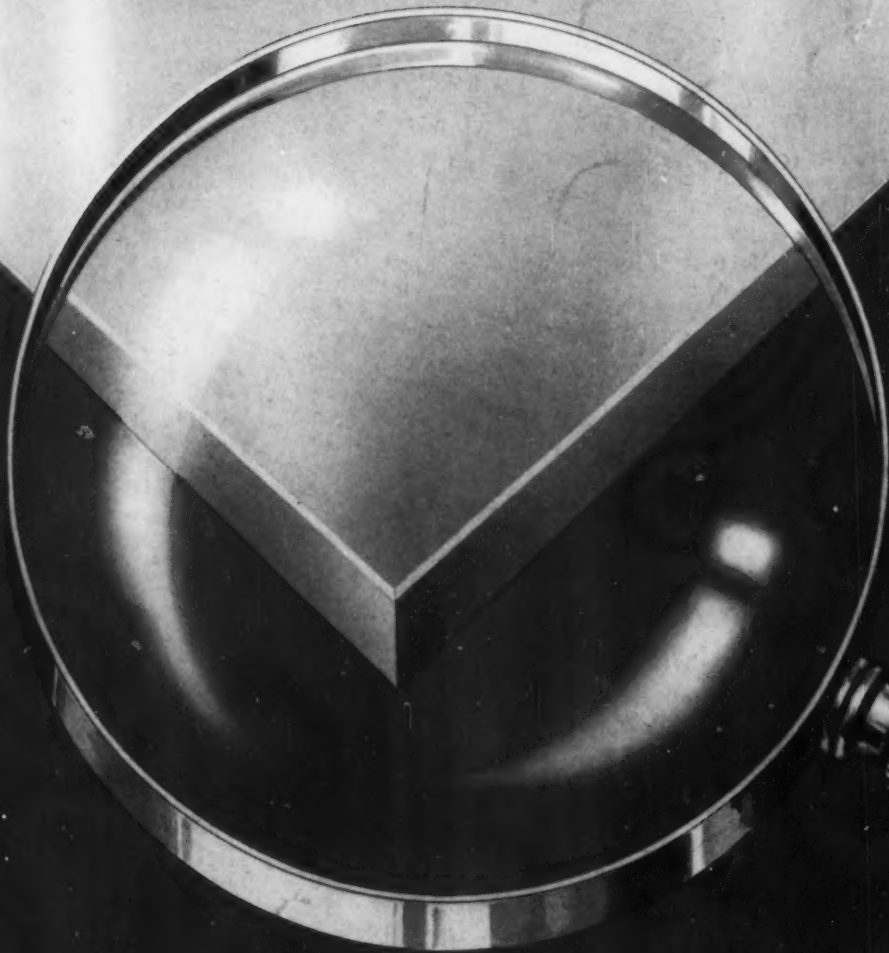
THE NATIONAL METALWORKING WEEKLY

December 29, 1949

DEC 30 1949

WORTH

STAINLESS-CLAD  
STEEL PLATE



FLANGED AND DISHED HEADS • CARBON AND STAINLESS-CLAD STEEL PLATES • WELDED STEEL PIPE

WORTH STEEL COMPANY, CO., WILMINGTON, DELAWARE



As the white outline indicates, a standard unit of more than double the frame size would be required to do the work of Speedaire.

## Latest in a distinguished series, **SPEEDAIRE** saves \$407

FOR 25 years, this plastics manufacturer has used Cleveland Worm Gear Speed Reducers. On the left you see one of our earliest standardized worm units, driving a rod extruder. In the center background is a current standard reducer, and in the foreground is a Speedaire.

All three Cleveland units do similar jobs, driving extruders. Yet compared to the standard model of equivalent capacity, Speedaire occupies less than half as much space, reduces weight by 700 pounds, and saves \$407.00 in initial cost.

Speedaire is Cleveland's new fan-cooled worm-gear speed reducer. Because it is fan-cooled, Speedaire will do more work—will deliver up to *double the horsepower* of standard worm units of equal frame size, at usual motor speeds. It can be installed economically on many applications where other types have been used heretofore—giving you the advantages of a compact right-angle drive. Speedaire gives the same long, trouble-free service characteristic of all Clevelands.

Send for Catalog 300 for a full description. The Cleveland Worm & Gear Company, 3252 East 80th Street, Cleveland 4, O.

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Worm Gear  
*Speed Reducers*



An example of fine workmanship...



*Bethlehem*

## FORGED HARDENED STEEL ROLLS

Bethlehem is an old, experienced hand in the making of forged steel rolls. We do a real precision job — one that makes these products thoroughly reliable for the cold-rolling of sheets, tinplate, or strip.

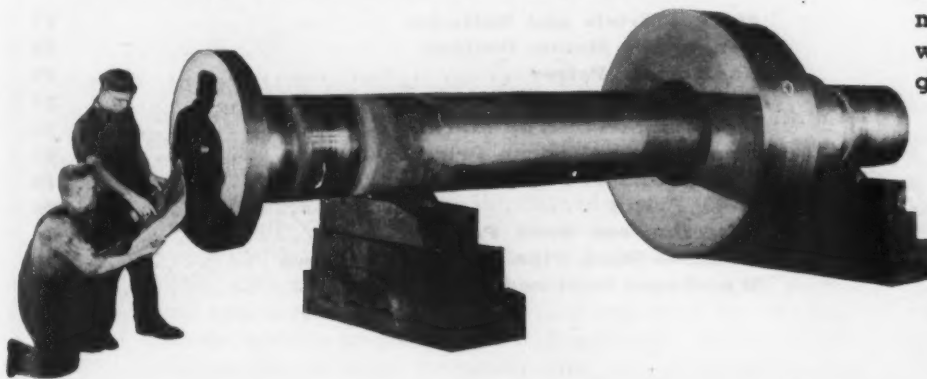
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**Editorial**

Here Is Your Chance, Mr. Fairless . . . . . 7

**News Interpretations**

Newsfront . . . . .	11
The Iron Age Summary . . . . .	15
Global Letter . . . . .	21
Machine Tool Highspots . . . . .	26
On the Assembly Line . . . . .	32
The Federal View . . . . .	36
West Coast Progress Report . . . . .	40

**Special Features**

Fatigue Cracks . . . . .	18
Iron Age Introduces . . . . .	20
Free Publications . . . . .	28
New Production Ideas . . . . .	29
The Economic Side, J. S. Lawrence . . . . .	68
Dear Editor . . . . .	89
Dear Customer . . . . .	90
The Clearing House . . . . .	94

**Technical Articles**

Automatic Controls Increase Furnace Output . . . . .	43
Manufacturing Controls of Large Steel Forgings . . . . .	46
Machining Aluminum Gear Cases . . . . .	49
Threadless Coupling Cuts Blast Furnace Repair	
Piping Time . . . . .	55
Job Lot Gear Manufacture . . . . .	58

**Spot News of Industry**

Study Shows Strip and Bar Extra Changes . . . . .	61
Industrial Shorts . . . . .	63
Cox Heads Kennecott; Hood, Carnegie-Illinois . . . . .	65
Steel Capacity Raised 2.5 Million Tons . . . . .	67
Dates to Remember . . . . .	67

**Markets & Prices**

Market Briefs and Bulletins . . . . .	71
Nonferrous Metals Outlook . . . . .	72
Nonferrous Prices . . . . .	73
Ferroalloy Prices . . . . .	74
Iron and Steel Scrap Market . . . . .	75
Iron and Steel Scrap Prices . . . . .	76
Comparison of Prices . . . . .	78
Steel Prices . . . . .	80
Miscellaneous Steel Prices . . . . .	81
Stainless Steel, Pipe and Tubing Prices . . . . .	83
Warehouse Steel and Pig Iron Prices . . . . .	84

Index to Advertisers . . . . . 104



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## Special Articles



How high production rates in the manufacture of washing machine gear-case parts were accomplished at the plant of Easy Washing Machine Corp., Syracuse, N. Y., is described in "Machining Aluminum Gear Cases," p. 49. "Threadless Coupling Cuts Blast Furnace Repair Piping Time 35 Pct," starting on p. 55, tells how Dresser threadless pipe fittings made possible a 35 to 40 pct time reduction in the installation of piping on a Newport Steel blast furnace during repairs after a break-out.

## Issue Highlights



Technological progress and changes in buying practice have caused drastic revisions in the extra charges accompanying the latest steel price revisions. While the base price increases were nominal in many cases the extras were sharply raised and lowered. A detailed study of the changes on carbon steel bars and hot-rolled strip shows an interesting pattern of change.—p. 61.



Charles R. Cox has resigned the presidency of Carnegie-Illinois Steel Corp. to head Kennecott Copper Co. Clifford F. Hood will move up from president of American Steel & Wire Co., to the C-I post. He will be succeeded by Harvey B. Jordan, who has been vice-president in charge of operations of the wire company. James E. Lose, vice-president in charge of operations of Carnegie-Illinois, has been elected executive vice-president.—p. 65.

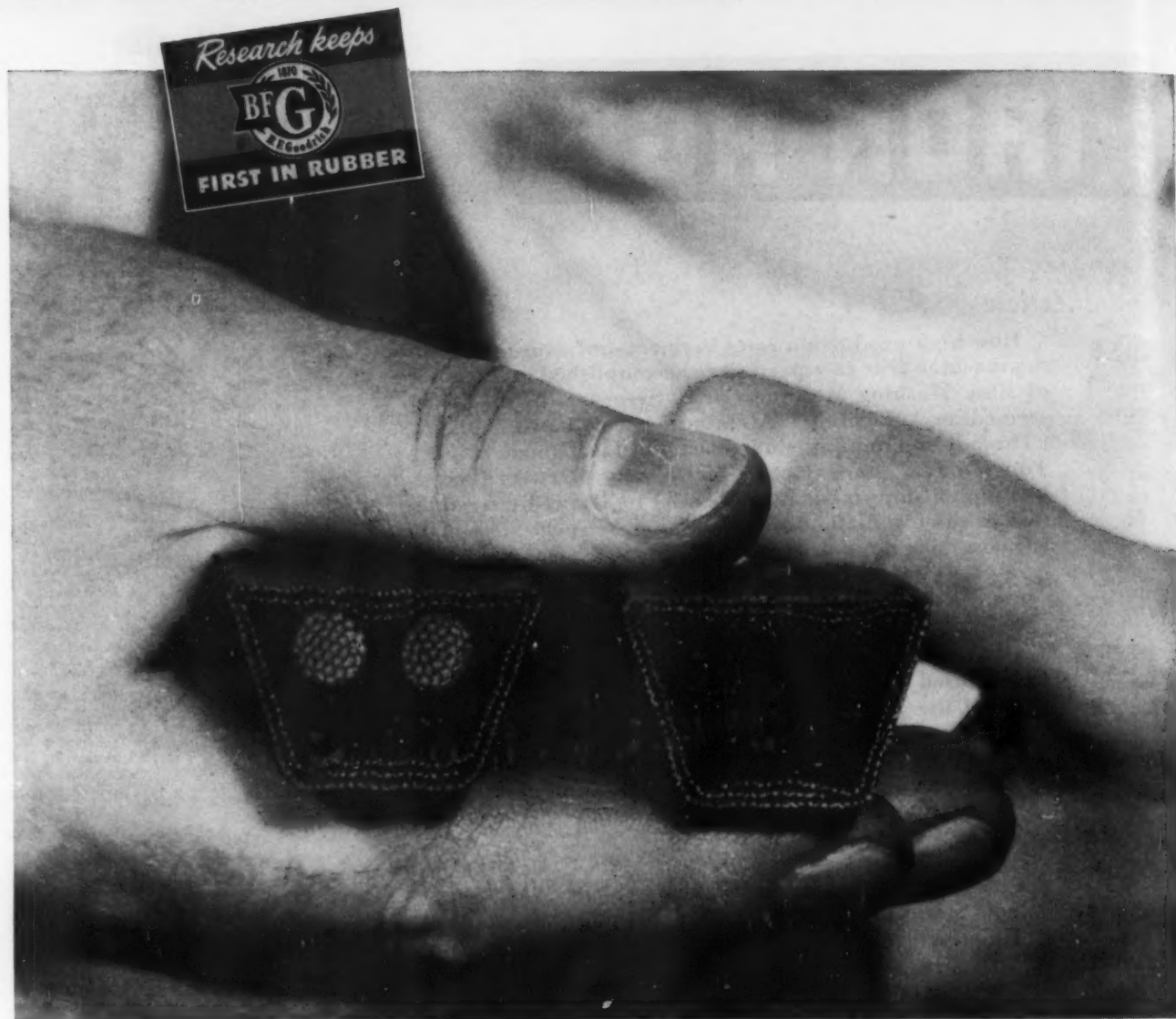


Steel companies in the United States added approximately 2.5 million tons to their annual ingot capacity during the past year, according to a study just completed by THE IRON AGE. This is a theoretical increase, showing what could be made if demand were there and there were no interruptions, but it does not account for improvements in melting practice.—p. 67.

## Coming Next Week



IRON AGE readers next week will be introduced to a new type of annual review issue. Called the "Metal Industry Facts Issue," it will give busy engineers and executives a carefully chosen collection of facts and figures on the metalworking industry... the type of information needed almost daily. Each section of this special issue will also give a quick, informative picture of important events of 1949. Other highlights of the special issue will be pertinent appraisal of what industry may expect in the coming decade, with no punches pulled. Results of a poll of IRON AGE readers to select the outstanding men of industry will also be announced in this outstanding issue.



## Can you guess which V belt will last 20 to 50% longer?

**T**HE cross-section on the right is from an ordinary type of V belt; that on the left is from a B.F. Goodrich grommet V belt. Both belts are the same size — "E" sections. Both cost the same. Yet the BFG grommet belt may outlast the other from 20 to 50%! Here's why —

**No cord ends** — A grommet is endless, made by winding heavy cord on itself to form an endless loop. It has no overlapping ends (as in an ordinary V-belt cord section), no stiff, weakened section of "spliced" cord. Because most of the failures in ordinary V belts occur in the region where cords overlap, the endless cord section in a grommet V belt eliminates such failures.

**Concentrated cord strength** — All of the cord material in a B.F. Goodrich grommet V belt is *concentrated* in twin grommets, positioned close to the driving faces of the pulley. This eliminates "dishing" of cords in the center of the belt, insures full use of all cord strength, maximum power delivery, even load distribution. No layers of cords to rub against one another and generate heat; cord and adhesion failures are reduced.

**Better grip, less slip** — Because a grommet is endless, free of stiff overlap, a grommet V belt is more flexible, grips the pulleys better. Size for size, grommet V belts will give  $\frac{1}{3}$  more gripping power, pull heavier loads with a higher safety factor.

**Only B.F. Goodrich has the grommet!** — Twin grommet construction is an exclusive, patented B.F. Goodrich feature — no other V belt is a grommet V belt. (U. S. Patent No. 2,233,294) To get genuine grommet V belts (at present made in D and E sections only) see your local B.F. Goodrich distributor. Ask him to show you his "X-ray" belt that illustrates grommet construction clearly. *The B.F. Goodrich Company, Industrial and General Products Division, Akron, Ohio.*

**Grommet V Belts**  
BY  
**B.F. Goodrich**

## Editorial

— I N D U S T R Y V I E W P O I N T S —

### Here Is Your Chance Mr. Fairless

**A**T least two Congressional hearings will be held soon over the steel price rise by U. S. Steel. Benjamin F. Fairless, U. S. Steel president, welcomes the chance to explain. That is fine. We hope that he will take a forceful and strong stand when he appears.

Of course, these hearings will be political. They have been before. They will be now. Neither Senator O'Mahoney nor others could conceivably deal with practical steel cost problems. They have had no such experience. It is up to Mr. Fairless to tell them in plain, simple terms just what his problem was, is—or will be.

Mr. Fairless may get rough treatment. He did a few years ago. There is no reason to believe he won't again. But now he can establish once and for all that steel people are in business to make a profit. If they don't, then they don't know how to run their business.

Government is not supposed to run the steel business or any other private enterprise. But if industrialists are not allowed to arrive at their own conclusions and to price their material so that they can stay in business maybe government may take over. If it ever does, things won't be so rosy for workers, the public or the government.

Mr. Fairless will be asked about profits. That isn't the big question. The question is: How much does his company make on each dollar of sales? And is it enough to pay the going wages? Is it enough to pay for pensions and insurance? Is it enough to replace a plant which costs four times as much as it did when it was installed? Is it enough to pay a dividend so the public will invest when expansion is needed?

No one expects steel to be a prince. Nor is it trying to. Mr. Fairless can make that clear. He can also ask why steel is always the whipping boy. Could it be that because it is a basic industry it is a good one to attack? So that later some people with dreams of government control of industry can see their dreams come true?

Let's get it on the record Mr. Fairless—if you can—that your company owes an obligation to workers, stockholders and the public. But let us also point out that the only way you get money to pay for things is by charging for your product. If costs go too high you can't operate at a loss. Wages, materials and pensions cost money.

Whether this increase is timely is beside the point. The time to get enough money to hold a fair position is when the cost records show that you are not taking in enough.

To wait too long is bad management. That is your responsibility. You tell them Mr. Fairless. You have been there enough times.

*Tom C. Campbell*

Editor



**now**

**FIELD**

**MILL**

**LABORATORY**

**REPUBLIC'S 3-DIMENSION**  
*Metallurgical Service...*

# NEWSFRONT

NEWS, METHODS AND PRODUCT FORECAST

► The printer's steel cutting rule, resembling a cookie cutter, is being successfully used in a West Coast aircraft plant for blanking stainless steel and aluminum stock. Some changes have been made in the technique, long used for cutting cardboard, celluloid, leather, fiber, etc. It has drastically cut costs on work where design, size and quantities are within its range. As many as 2500 parts have been made with one "cookie cutter."

► Central Iron & Steel will soon build a mill at Harrisburg to make welded pipe 6 to 20 in. in diam and in 40-ft lengths.

► One of the largest stainless steel sheet applications placed recently is for a beer storage tank building where the sheets will be welded into individual cells or tanks. Shielded arc welding of the 45-ft long seams involved is one of the most complicated jig setups yet to be used.

► Porcelain enameled surfaces are being considered for interiors of certain types of freight cars. These panels, of 20- or 22-gage steel, are easier to clean and less likely to corrode. In carrying certain products they permit better sanitary conditions.

► Despite the heavy pressure from unions and the government which forced industry to sign non-contributory pension contracts, important labor and government leaders still believe old age pensions are the prime responsibility of the Federal government. It was easier to get pensions from industry than Congress.

These leaders will tell you privately that social security is due to be increased and broadened—so current pension contracts may not prove as onerous as some think. Some industry leaders are expected to join labor and government people in urging more Federal Social Security.

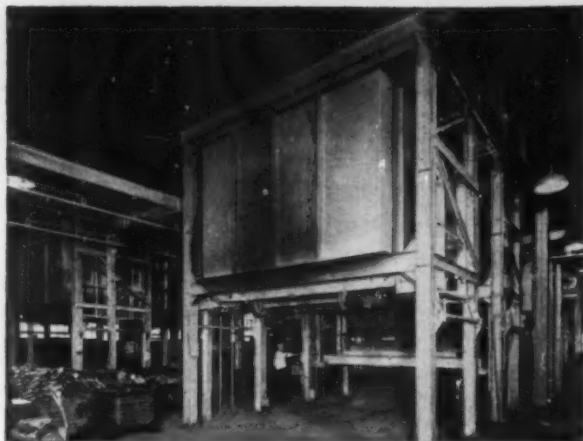
► Americans spend about as much on federal, state and local government as they do for food—\$51.8 billion for government and \$52.9 billion for food in 1948.

► With cold-rolled sheet extras practically reversed in new price schedules there will be a terrific push on manufacturing cost and method studies. If production setups can be changed to take advantage of the price cuts on wider sheets, the savings will in some cases exceed \$12 per ton of steel.

► The old Chester blast furnace near Philadelphia will be in the limelight soon again. It is now owned by an oil company but Barium Steel Corp. is flirting with the idea of buying it. Barium operates Central Iron & Steel and Phoenix Iron & Steel and apparently some people in the company have their eyes on the long term iron ore and pig iron picture. This furnace would be ideal for Labrador or South American ores—or African ores.

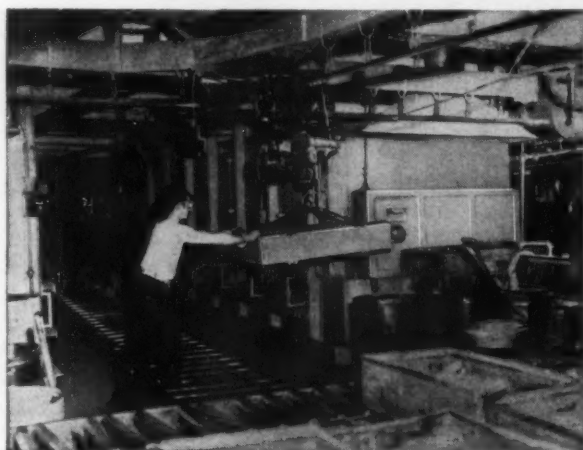
► Secretary of Commerce Sawyer takes a dim view of plans to stock-pile freight cars for a national emergency, arguing that maintenance costs would be high and equipment would become obsolete before it might be needed. Carbuilders, privately citing the vast number of obsolete cars that have been running since before the war, don't agree on the obsolescence angle.

► The price of Lake Superior district iron ore delivered at lower Lake ports is expected by trade sources to advance by 50¢ a ton for the 1950 season. Pensions, exploratory drilling and development of new mines have substantially increased iron ore producers' costs during the past year.



... four pairs of G-E electric furnaces anneal 32 tons per day in this midwestern foundry.

## Annealing steel castings



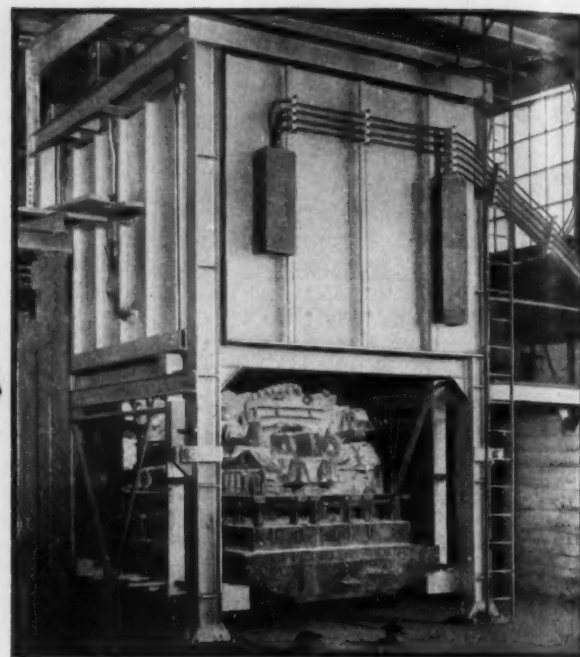
... two pusher-type G-E furnaces anneal 30 tons per day in this eastern plant.

# DO IT BETTER

## *Electrically*

Tell us about your annealing job, and we'll show you what General Electric furnaces can do for your particular operation. G-E furnaces and electronic induction heaters are also available in a variety of types and ratings for brazing, hardening, drawing, soldering, carburizing, and most other heat-treating processes. Ask your nearest G-E office to put you in touch with a G-E Industrial Heating Specialist. Or write direct to Sect. 720-9, Apparatus Dept., General Electric Company, Schenectady 5, N. Y.

## Annealing malleable iron castings



... one G-E elevator furnace anneals 10 tons per charge in this southern foundry.

## Annealing grey iron castings



## ELECTRIC FURNACES

In addition to a shorter time cycle and increased output, they also give you:

- Lower over-all cost
- More uniform, better quality anneal
- Materially reduced cleaning costs
- Minimized thermal losses
- Cleaner, cooler working conditions
- Dependable continuity of service with less maintenance
- Less floor space required

# GENERAL ELECTRIC



Steel Output 77.5 Million Tons

Brisk First Quarter Predicted

Auto Steel Price Boost Tops \$6

# The Iron Age

## SUMMARY

IRON AND STEEL INDUSTRY TRENDS

THIS week the steel industry will wind up the year with total steel production very close to 77,500,000 net tons of ingots and steel for castings. Finished steel shipments for the year will exceed 57,000,000 net tons. It was not a record year because of the partial satisfaction of demand pent up during the war, the recession and the steel strike. But it topped any prewar year by millions of tons: It was 14 million tons better than the boom year of 1929.

High level operations, between 85 and 95 pct of capacity, will continue at least through March of this year. This prediction is made despite squeamishness in some quarters. It is based in part on the fact that automobile manufacturers are optimistic about the immediate future, see good business ahead for at least 6 months.

### Strong Sheet Demand Predicted

For this reason, flat-rolled steel will continue in strong demand for the first quarter of 1950, for it is during this period that the automobile industry expects to set production records, expects March to be a record for all time.

This week the steel order picture continues to look good. Cancellations are running at about the same rate as they were — practically nil. Order volume has tapered off a little, mostly because mills are booked so far ahead that consumers are discouraged about trying to place orders right now.

There are at least five other bright business prospects on the horizon as the year ends: (1) Tremendous public works plans; (2) continued heavy buying by utilities; (3) new road building programs; (4) a high level of housing construction; and (5) good prospects for office buildings.

The steel ingot operating rate for this week is off 9 points from last week's rate of 94.5 pct of capacity. The drop to 85.5 pct of rate capacity is caused by Christmas shutdowns, one of the few holidays of the year when steel melting operations are halted.

### O'Mahoney May Regret

No time is a good time to increase steel prices — from the political standpoint. But there are

indications that Senator O'Mahoney may regret his action in calling for a steel price investigation. Staff members of the Joint Economic Committee who are now gathering data for the forthcoming hearings on steel price increases are finding little within the executive agencies to support the Senator's position and one prominent government economist told THE IRON AGE that the steel industry's primary mistake was that it did not raise prices as much as producers of other basic commodities—"that if it had done so during the early postwar period none of this furore would have been raised." By this week most steel companies had met the new prices announced effective Dec. 16 by U. S. Steel Corp.

### Automakers Worried at Reaction

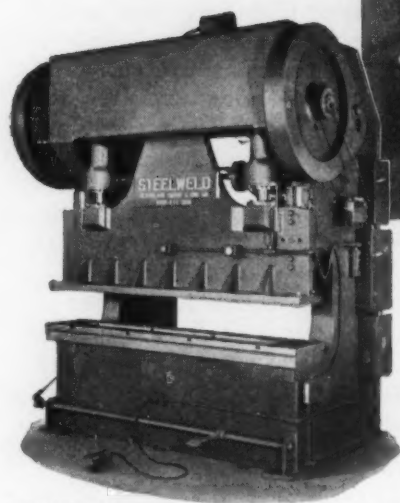
Automobile companies are concerned over the possibility that the cut in cold-rolled sheet extras for certain gages, widths and lengths might be interpreted as a net steel price reduction to automobile manufacturers. They are particularly sensitive because since the war, car price increases have usually followed steel price increases. Automobile prices generally rose much more than did total steel costs. Though this was influenced by additional factors the public usually blamed higher car prices entirely on higher steel prices.

The fact is that automobile companies are going to pay more now for their steel, on the average. A few sheet sizes have come down substantially, some took only minor increases but others—and strip and bars—were raised. A study just completed in Detroit indicates that on the basis of previous specifications, the cost of steel going into a car will initially be \$6 to \$8 a ton higher. But some auto companies have already changed specifications to take advantage of the new extra lists. When this process and manufacturing changes are completed it is possible that the average increase to the auto industry may be somewhat less.

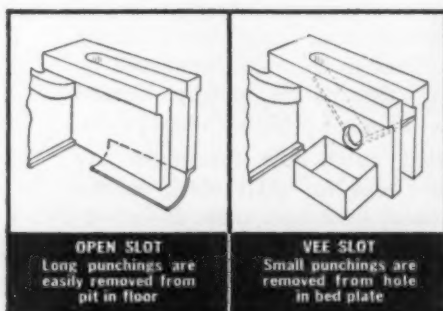
Steelmaking scrap prices drifted aimlessly in a dull market with small declines in the East. A drop of \$1.00 a ton at Philadelphia sent THE IRON AGE steel scrap composite off by 34¢ a ton to \$26.58 per gross ton.

# Slotted Beds

## for Punching



Model H4-6 Press  
with slotted bed. Handles plate to 6' 0" long between end housings. Operated by foot treadle or air-electric control.



**OPEN SLOT**  
Long punchings are easily removed from pit in floor

**VEE SLOT**  
Small punchings are removed from hole in bed plate

### Converts Bending Press to Punch Press... and Cuts Costs as Much as 1/2

Because Steelweld Presses adapted for punching often cost as little as one-half that of ordinary punch presses a number of companies have purchased them and effected real savings.

Double-plate beds are usually employed with extra wide bed and ram to support the dies. In other respects the presses are standard. Machines have been built with beds as wide as 36", with slots in bed varying from 3" to 6 3/4" wide. The punchings drop between the bed plates (See sketches) and are easily removed from behind the machine.

The same presses used for punching can be used for bending and other forming operations. Steelweld Presses are built in all lengths to 20' 0" and in various capacities to 500 tons.



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**THE ONLY PLATE  
WITH THE  
SOLID, NON-POROUS GRID**

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This new, non-porous "Z" grid is the result of "Progressive Solidification"—a new, advanced casting technique developed and perfected by the Gould Research Laboratory and proved in Gould's own pilot plant.

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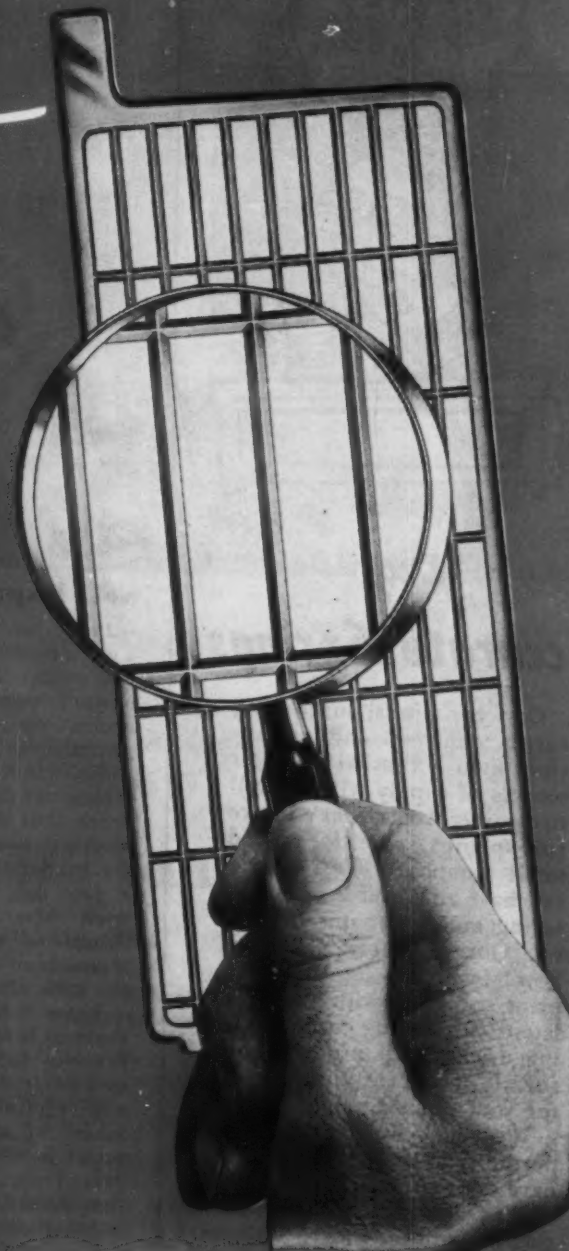
The Gould "Thirty"  
More than ever—America's  
Finest Industrial Truck Battery.

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**STORAGE BATTERY  
CORPORATION**

TRENTON 7, NEW JERSEY

*Always Use Gould Automobile and Truck Batteries*





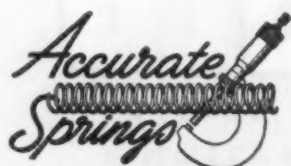
## Cost conscious?



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We would welcome the opportunity to show you what we have done for others and what we can do for you. Give us a ring or write us today.



**COST CONSCIOUS QUALITY**

Since 1930

**ACCURATE SPRING MFG. CO.**

3819 W. Lake St. • Chicago 24, Ill.

*Springs, Wire Forms, Stampings*



## **Fatigue Cracks**

By *Charles T. Post*

### **Self Improvement**

In a few days now the New Year's resolution season will be in full swing. Ever striving upward, onward, men will bundle up their aspirations and swear that THIS year they're really going to dig in.

We've never seen any efficiency tables, but there is fairly good evidence that there are two separate weeks during the year when men try harder than other times to do a good job. One of them is the week after Labor Day, which brings to an unofficial end the lassitude of summer. The other is the week after New Year's day.

Those whose job it is to sell business books and magazines, your favorite family journal's circulation department not excepted, know and capitalize on these sudden surges of effort. Sales and subscription solicitations bring in orders from people who at other times have little interest in self-improvement.

Now you'll know the reason if you receive a sudden flood of subscription solicitation mail next week. And if you find yourself filling in some of the order blanks, it probably won't hurt you a bit.

### **Cash**

We have received a folder from a gentleman named Earl Prevette who wants us to buy a copy of his book entitled "How To Turn Your Ability Into Cash."

If the bank account weren't completely wiped out by Christmas, we would probably have dropped a

check in the mail right away. If there's a magic formula we would want to know about it.

Reflecting further, we wondered why Mr. Prevette would be writing a book on the subject instead of being busy practicing what he preaches. Then it suddenly struck us that the book was Mr. Prevette's way of turning *his* ability into cash.

### **Gray Iron**

More than 2 years ago this department scratched its head of the apparent inability of foundrymen to agree as to whether their product was gray iron or grey iron. We say "apparent inability" because the Gray Iron Founders Society informed us with dignity that gray iron was correct, with the implication that anyone who wrote "grey iron" was a heathen.

After bandying the subject about, we went on to greener fields and forgot about it. The Gray Iron Founders Society didn't.

Last week the Society sent us a copy of a letter which it had received from Delta Oil Products Co. in which Delta admitted to having been wishy-washy about *gray* and *grey* in its advertising and promised to be more devout from now on.

Apparently the society is pursuing heathens and backsliders with missionary zeal, and certainly no missionary could be prouder when he makes a convert. You'd

Turn to Page 89



# from this Completely Integrated Plant

## WISCONSIN STEEL can supply

### BASIC OPEN HEARTH STEEL

- **ALLOY STEEL**  
Bars  
Billets  
Blooms  
Slabs
- **CARBON STEEL**  
Bar Mill Products  
Rounds and Squares  
Flats  
Bar Size Angles and Channels  
Tire Sections  
Spring Steel  
Special Sections
- **STRIPS**  
Hot Rolled
- **STRUCTURAL SHAPES**  
Angles  
Channels  
Special Sections
- **SEMI-FINISHED**  
Billets  
Blooms  
Slabs
- **PLATES**  
Universal Mill
- **SPECIAL STEELS**
- **SULFITE-TREATED STEELS**
- **COLD FINISHED ROUNDS** Alloy and Carbon

### FACILITIES FOR ANNEALING, HEAT TREATING AND MACHINE STRAIGHTENING

- PIG IRON ● BASIC ● MALLEABLE ● FOUNDRY

Contact our sales department and let us know your requirements. We are ready to give you the technical and metallurgical assistance you need to solve your problems. Remember, Wisconsin Steel means *quality*.



**WISCONSIN STEEL COMPANY, Affiliate of  
INTERNATIONAL HARVESTER COMPANY**

180 North Michigan Avenue, Chicago 1, Illinois

# WISCONSIN STEEL

December 29, 1949

19

# Iron Age Introduces



**IVOR D. SIMS**, purchasing agent, Bethlehem Steel Co.



**L. L. LEWIS**, secretary and director, Carnegie-Illinois Steel Corp.



**JOHN A. SLENKER**, manager of operations, American Steel & Wire Co.

**Ivor D. Sims**, assistant purchasing agent of BETHLEHEM STEEL CO., Bethlehem, has been appointed purchasing agent. Mr. Sims joined Bethlehem in 1933 as a junior buyer. He was advanced to buyer in 1939, and, in 1944, to assistant purchasing agent.

**Anthony M. Ryerson** has been appointed assistant general manager of sales for the INLAND STEEL CO., Chicago, succeeding **Neele E. Stearns** recently elected executive vice-president of the Inland Steel Products Co. in Milwaukee.

**Edgar T. Long** has joined REYNOLDS METALS CO., Louisville, as assistant product manager of the Wire, Rod, Bar, and Rolled Shapes Div. Mr. Long was formerly with Bethlehem Steel Co., Bethlehem.

**L. L. Lewis** has been elected secretary and director of CARNEGIE-ILLINOIS STEEL CORP., Pittsburgh, and **C. E. Stewart** appointed assistant secretary. **James W. Hamilton** has resigned as secretary and director of the company so that, prior to his retirement, he may devote his full time to other duties. In 1948 Mr. Lewis joined Carnegie-Illinois as general attorney.

**E. J. Krause** has been appointed general service manager of the Buick Motor Div., GENERAL MOTORS CORP., Flint, Mich., succeeding the late **C. W. Jacobs**. Mr. Krause has been assistant general service manager.

**Walt Scott** has been named manager of the order service department of the CLEVELAND CHAIN & MFG. CO., Cleveland.

**John A. Slenker** has been named manager of operations of the Duluth district of the AMERICAN STEEL & WIRE CO., Cleveland, to succeed **L. J. Westhaver** who was appointed manager of operations of the Geneva Steel Co., Geneva, Utah. Succeeding Mr. Slenker as general superintendent of the Duluth Works will be **Clarion A. Purbaugh**, formerly division superintendent, open hearth. **Keith H. Moody** has been appointed to succeed Mr. Purbaugh.

**George W. Walton** has been elected executive vice-president and member of the board of directors of the INTERNATIONAL DERRICK & EQUIPMENT CO., Columbus, Ohio. Mr. Walton joined Ideco in 1944, and was vice-president in charge of the company's Machinery and Export Sales Div.

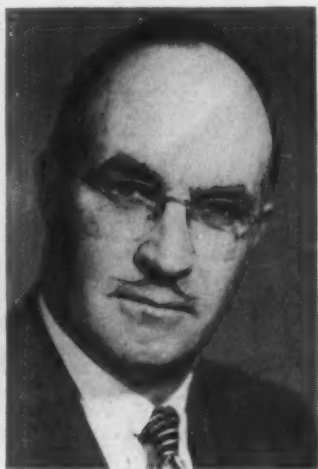




**G. G. BEARD**, executive vice-president, United Engineering & Foundry Co.



**R. L. VAN ALSTYNE**, manager of all scale factories, Fairbanks, Morse & Co.



**RUSSELL S. COLLEY**, manager of the sales of Rivnuts, B. F. Goodrich Co.

**G. G. Beard** has been elected executive vice-president of the **UNITED ENGINEERING AND FOUNDRY CO.**, Pittsburgh. Mr. Beard began his service with United as an Engineer in 1927. He was elected a vice-president in 1943 and became a director of the company in 1944.

**James McConnell** has been appointed superintendent of merchant mills at the Indiana Harbor Works of the **YOUNGSTOWN SHEET AND TUBE CO.**, Youngstown, succeeding **Fred A. Schuessler** who died. Mr. McConnell joined the company as finishing end foreman in the Harbor Works merchant mill in 1931. **L. I. Stead** has been appointed chief chemist for the Chicago district plants. Mr. Stead joined the company in 1918 as a chemist and became assistant chief chemist in 1936.

**Francis B. Foley** has joined the Research Laboratory of the **INTERNATIONAL NICKEL CO., INC.**, New York as consulting metallurgist. Mr. Foley was formerly with the Midvale Co., Philadelphia. He was president of the American Society for Metals for the 1948 term.

**Harlan W. Burbank** has been appointed district representative of the **FEDERAL MACHINE AND WELDER CO.**, Warren, Ohio. Mr. Burbank has represented the company for the past several years in Mexico. The office in Mexico City will continue in operation with **E. L. Stinyard** in charge.

**R. L. Van Alstyne** has been named manager of all scale factories of **FAIRBANKS, MORSE & CO.**, Chicago. He has had many years of manufacturing activity with Fairbanks, Morse & Co. in various production and executive capacities.

**Dr. Cuthbert C. Hurd** has been appointed director of the Applied Science Dept. of **INTERNATIONAL BUSINESS MACHINES CORP.**, New York. Prior to joining IBM in 1949, he was a research head at Oak Ridge, Tenn. **Helen B. Taft** has been named manager of the Systems Service Dept. Miss Taft was previously assistant to the general sales manager.

**Dr. Zay Jeffries**, vice-president in charge of the Chemical Dept. of the **GENERAL ELECTRIC CO.**, Schenectady, will retire from the company Dec. 31. Dr. Jeffries has been a member of GE's four-man committee which administers the nucleonics project, consisting of all work on atomic energy being conducted by the company for the government.

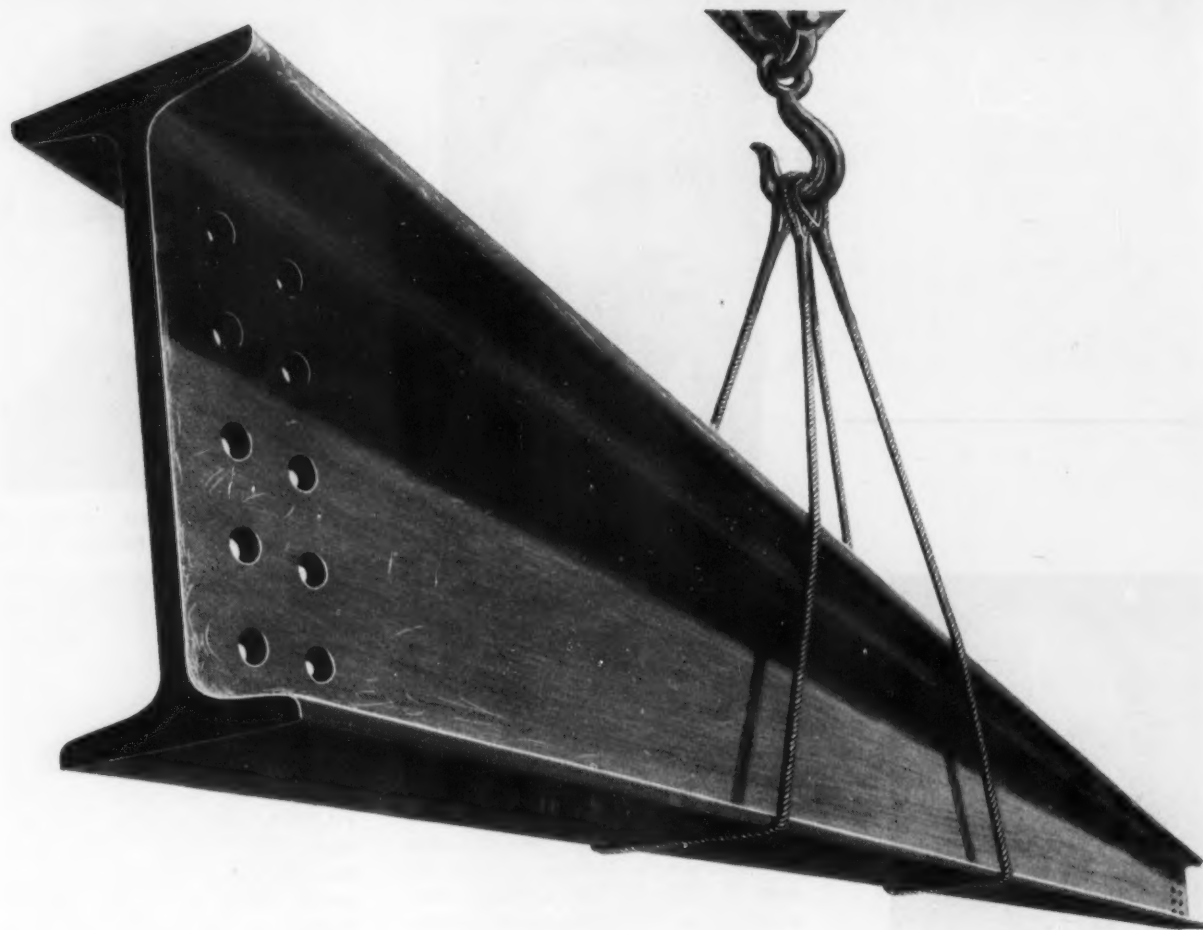
**J. H. Berryman** has been appointed assistant to the manager, technical sales division, **AIR REDUCTION SALES CO.**, New York. Mr. Berryman will assist **Scott D. Baumer**, manager, technical sales division. He joined Air Reduction in 1946 and served in the technical sales division as machine welding specialist and assistant metallurgical engineer until his recent promotion.

*Turn to Page 85*

**Russell S. Colley** has been named manager of the sales of Rivnuts for the **B. F. GOODRICH CO.**, Akron, Ohio. Mr. Colley has been with the company for 21 years starting in the machine and process department.

**Robert B. Colgate** has been elected a director of the **AMERICAN CAR AND FOUNDRY CO.**, New York. Prior to his association with ACF, Mr. Colgate was vice-president of research and development and a member of the executive committee of Colgate-Palmolive-Peet Co.

**W. Bruce Fye** has been appointed retail finance representative for the central district of **WESTINGHOUSE ELECTRIC CORP.**, Pittsburgh. Mr. Fye comes to Westinghouse after four years with the First National Bank, in Meadville, Pa.



## 2,700 tons of steel...every 24 hours!

Once around the clock . . . and 2,700 tons of steel ingots are produced at Kaiser Steel's mammoth Fontana plant.

That would make enough structural shapes to erect a 12-story building. Or enough plate to build

one coastal freighter. Or enough pipe to supply 3,400 homes. *Every 24 hours!*

More evidence that the West's only integrated independent steel plant is bringing more industry, more jobs, more wealth to the West!

*It's good business to do business with*

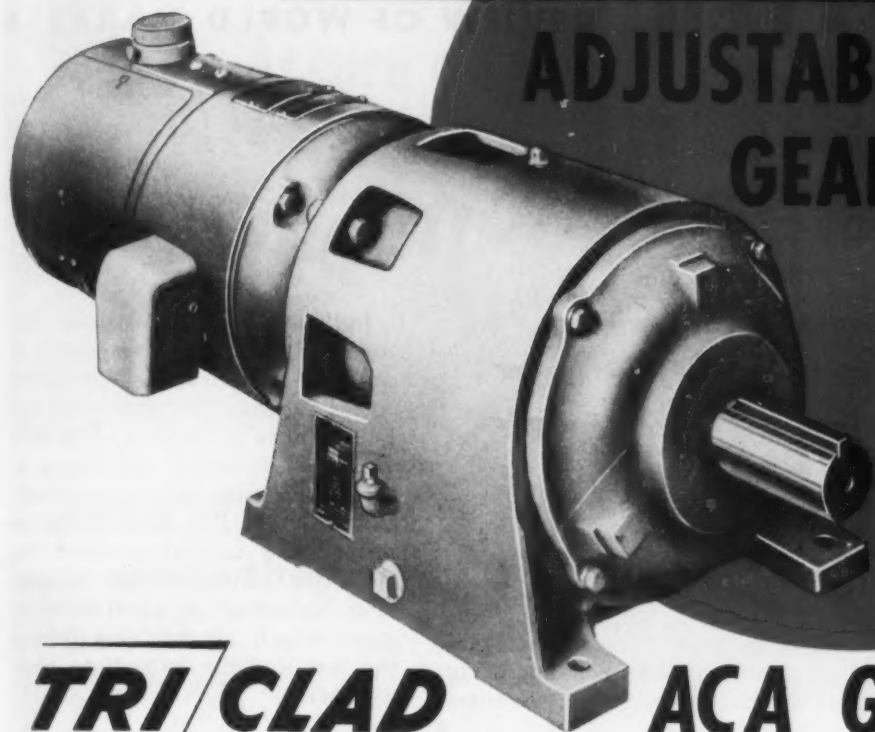
# **Kaiser Steel**

*built to serve the West*

**PROMPT, DEPENDABLE DELIVERY AT COMPETITIVE PRICES** • plates • continuous weld pipe • electric weld pipe • hot rolled strip hot rolled sheet • alloy bars • carbon bars • structural shapes • cold rolled strip • cold rolled sheet • special bar sections • semi-finished steels pig iron • coke oven by-products • For details, write: **KAISER STEEL CORPORATION, LOS ANGELES, OAKLAND, SEATTLE, NEW YORK**

**NEW** *all-electric*

## ADJUSTABLE-SPEED GEAR-MOTOR



from **\$559\***

**TRI-CLAD**  
REG. U.S. PAT. OFF.

**ACA GEAR-MOTOR**

LOW COST ★ LOW OUTPUT ADJUSTABLE SPEED ★ LOW MAINTENANCE AND INSTALLATION COSTS

### Buy General Electric and get

Stepless, low, adjustable output speed  
Extra load-carrying capacity in less space  
Easier mounting in less space  
Industry-proved Tri-Clad construction  
Double-barrelled efficiency because of low  
motor and gear losses  
Reduced maintenance costs

They are available in standard ratings from  
3-15 horsepower 35/12 to 602/201 rpm.

A right answer for your low-output stepless adjustable-speed-drive applications, our ACA gear motor will do an outstanding job for you driving

**Conveyors**

**Reciprocating pumps**

**Agitators**

**Mixers**

For the majority of your low-speed drives, standard ACA gear-motors fill the bill. Other ratings in large horsepowers, or lower speeds or wider speed ranges are available on proposition request.

NOW IS THE TIME TO FILL YOUR NEEDS ON ALL GEAR-motor requirements. Call your nearest General Electric Sales Office or your local distributor. **Apparatus Dept., General Electric Company, Schenectady 5, N. Y.**

\* Manufacturers suggested list price.

**GENERAL ELECTRIC**

December 29, 1949





# GLOBAL LETTER

## REVIEW OF WORLD MARKETS

**England's steel production compares favorably with prewar output . . . Demand for some items is easier . . . Europe's largest hot strip mill becomes a reality in France.**

London—November steel production was at an annual rate of 18,320,960 net tons, thus exceeding the previous best November—last year—when the rate was 17,651,200 tons. The November production was only slightly below the best month the industry ever had—in May of this year, when the rate was 18,378,080 tons.

The high rate of production now being achieved compares favorably with the best prewar or wartime month. Production was running at a rate of 17,302,880 tons during the first three quarters of this year. With higher figures for October and November, and still allowing for some fall over the Christmas holidays, the industry believes that it should achieve the upper limit of the target for the year set by the government in the Economic Survey, namely 17.08 to 17.36 million tons.

### Markets Have Changed

As the year draws to a close, it is evident that the industry will start 1950 with conditions substantially different from those ruling 12 months earlier. Throughout the year the emphasis has been on output and the industry's performance is very creditable, espe-

cially in regard to the fact that the industry has been operating under the threat of nationalization.

At the beginning of the year there was a ready outlet for practically every ton of steel that could be produced. As the year progressed the pointer on the trade barometer began to waver, although it is still "set fair." It is obvious that in the coming 12 months the industry will not be operating in the seller's market which it entered a year ago.

Although the demand for flat-rolled products such as plates, sheets and strip still holds up extremely well, with substantial backlogs of orders, the position in other products is definitely easier. This applies especially to small sections and bars of the sizes customarily rolled by the independent mills which buy their steel in the form of billets.

### Will Keep Output Up

There is no indication that demand has failed. Manufacturers hope to go on with the current record figures, and even improve on them in the New Year. But it is no longer right to talk of an overall steel shortage.

Indications from Western Europe are that the same trend is evident there. Latest comment comes from the International Labor Office at Geneva. The iron and steel industry, according to the I.L.O., must rely increasingly in the future "on what might be termed the normal demand for steel, with little further support from the arrears of unsatisfied demand which accumulated during the war and the immediate post-war years."

### Will Purchase Pipe Mill

Tel Aviv—Industrial sources here are reported to have purchased, or are closing negotiations for a pipe mill in the United States.

The mill is being purchased in California, U.S.A. It is understood to be capable of rolling steel pipe 8 to 20-in. in diameter.

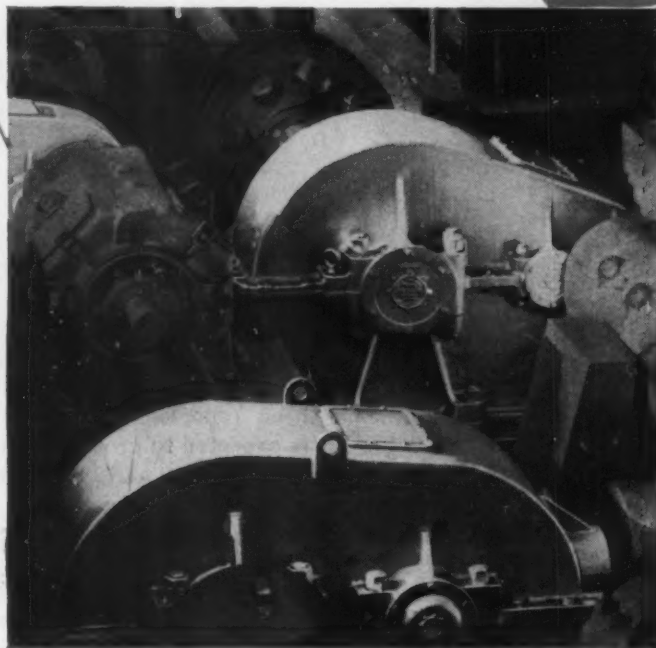
### Reveal Details of French Expansion in Iron, Steel

Paris—The biggest plan of continuous hot strip mill and tinplate in Europe officially became a reality on Dec. 22, when more than 200 guests headed by Mr. Schuman, French Minister of Foreign Affairs, Mr. Lacoste, Minister of Industry and Trade, Mr. David K. E. Bruce, American Ambassador, and Mr. Barry Bingham, Chief of the Special Mission of ECA in Paris, will inaugurate the Lorrain SOL-LAC steelworks of the Societe Lorraine de Laminage continu near Metz.

Turn to Page 103

# Assure a *Reduction in* *Reduction Gear Upkeep*

**Gears last longer**  
when they  
have the  
***EXTRA***  
***PROTECTION***  
of Texaco  
**Meropa Lubricants**



*Photo courtesy Link-Belt Company*

Cushion the load on your heavy-duty enclosed gears with *Texaco Meropa Lubricants* and gain three benefits: 1) smoother, more trouble-free operation; 2) longer life for both gears and bearings; and 3) lower maintenance costs.

Long-lasting *Texaco Meropa Lubricants* are especially made to maintain a clinging, protective film on the gear teeth and to protect bearings. They strongly resist oxidation and thickening . . . do not foam . . . do not separate in service or storage.

In circulating systems for oil film roll necks, use

*Texaco Regal Oils*. These heavy, turbine-grade oils stand up under high temperatures . . . resist oxidation, emulsification and sludging . . . keep the system *clean*.

A Texaco Lubrication Engineer will gladly help you increase efficiency and economy in all your operations. Just call the nearest of the more than 2300 Texaco Wholesale Distributing Plants in the 48 States, or write:

The Texas Company, 135 East 42nd Street, New York 17, N. Y.

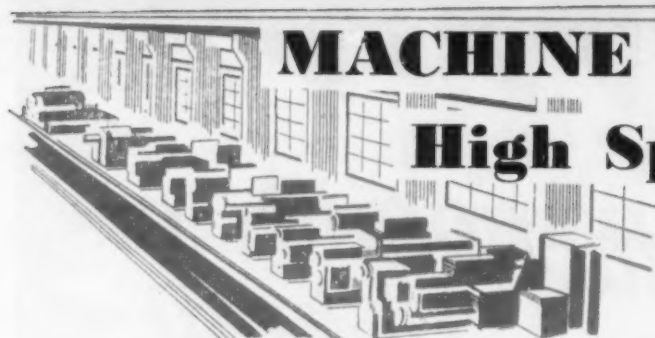


## TEXACO Meropa Lubricants

FOR STEEL MILL GEAR DRIVES

TEXACO STAR THEATRE PRESENTS MILTON BERLE ON TELEVISION EVERY TUESDAY NIGHT. METROPOLITAN OPERA BROADCASTS EVERY SATURDAY AFTERNOON.

December 29, 1949



# MACHINE TOOL

## High Spots

Sales  
Inquiries  
and Production



by

*William A. Lloyd*

**December looks like big month for industry . . . November was up . . . Detroit looks for unusually active year ahead.**

**Cleveland**—New order volume was gaining momentum this week as December, despite the holiday period, began to shape up as one of the top months of 1949 for the machine tool industry, spokesmen for major segments of the industry reported this week.

It was emphasized that it is too early to tell whether the upsurge in new order volume marks the start of a general buying movement, or an effort on the part of many manufacturers to clean up remaining appropriation money, but in either event, the business is coming in.

A preliminary report on November business, according to National Machine Tool Builders' Assn., shows a new order index of 84.3, compared to 56.8 for October. Index of shipments was reported at 68 compared to October's 62.3 and ratio of unfilled orders to shipments was 3.7 to 1.

### **Detroit Looks for Upswing**

In Detroit a survey of important segments of the machine tool industry indicates that many firms are looking toward an unusually active 1950. During the past few weeks important tooling programs that have been simmering for months have been activated. Other important tooling developments

that could continue through 1951 appear to be imminent.

During the past week the first commitments on a Studebaker V-1 high compression engine have been reported. This development is expected to proceed rapidly now that the ice has been broken.

On top of the recent activity in the Ford automatic transmission is the virtual certainty that Ford will have a new high compression engine before the year 1950 comes to a close. There are also indications that a similar development for Lincoln is well along toward the final stages. In addition, some recent purchases for the Ford Anglia have been reported.

### **Chrysler Quotations Are Due**

Informed sources now believe that Chrysler placements for a new high compression engine may be reached by the end of the current year. At least, requests for quotations should be in Chrysler hands by that time with the understanding that quick decisions will be reached by top management.

Other tool buying recently reported concerns Chevrolet Gear & Axle and Spicer Manufacturing. Local tool and die shops are also in the market for small shapers,

lathes and other types of standard equipment, it is reported.

### **Ayr Estimates '49 Shipments**

In Torrington, Conn., total machine tool shipments in 1949 were estimated this week at about \$250,000,000, compared with \$274,000,000 for 1948, by David Ayr, president of National Machine Tool Builders' Assn., in a year-end statement.

Mr. Ayr, who is also president and general manager of Hendey Machine Co., Torrington, said the decline from 1948 volume reflects the business uncertainty of mid-summer, coal and steel strikes this fall and currency devaluation difficulties hampering foreign sales.

Commenting on the outlook for the machine tool industry in 1950, Mr. Ayr branded the present degree of obsolescence of machine tools in metalworking plants as "appalling."

He said the installation of new machine tools which will produce more per man-hr is imperative for manufacturers faced with high wages and taxes and the necessity of price reductions to hold present markets or gain broader ones.

Mr. Ayr reported that current sales show an increase and inquiries are coming in larger volume.

### **Competition Demands New Tools**

"The outstanding business characteristic today is severe competition and severe competition demands reduction in costs. On this basis it would seem probable that shipments of machine tools to such manufacturers in 1950 will exceed those for 1949," Mr. Ayr concluded.

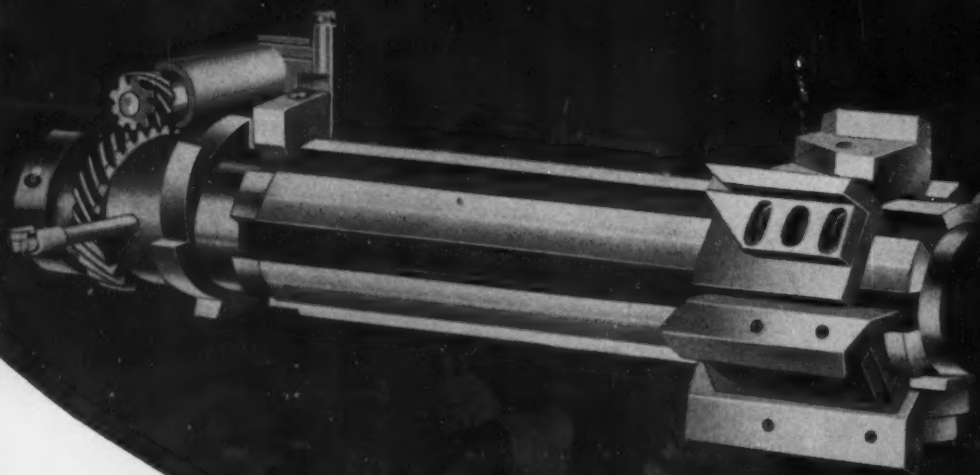
In Washington, a list of Austrian companies who may buy machine tools and construction equipment under the Marshall Plan has been issued by Economic Cooperation Administration. According to ECA, the list was received from the Austrian government which is planning to purchase a large variety of machine tools and construction items between now and next June 30. More than 100 listed companies are being asked by the Austrian government to get bids for specific equipment.



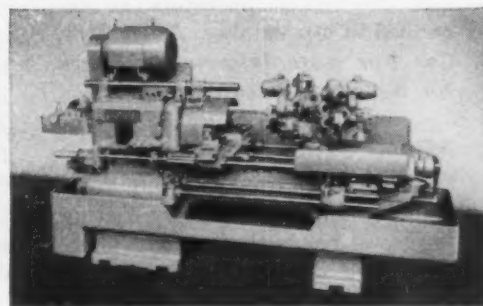
# **GISHOLT**

## ***Fastermatics***

**(AUTOMATIC TURRET LATHES)**



This simple control drum enables you to select the **BEST** feed for **EACH** cut because the Fastermatic provides infinite feed selection rather than limited and fixed gear ratios. Thus it makes feed selection efficient, quick and easy. Write for literature.



**THE GISHOLT ROUND TABLE** represents the collective experience of specialists in machining, surface-finishing and balancing of round or partly round parts. Your problems are welcomed here.

**GISHOLT MACHINE COMPANY**

*Madison 10, Wisconsin*

**Turret Lathes • Automatic Lathes • Superfinishers • Balancers • Special Machines**

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USE POST CARD

## PUBLICATIONS

### Blast Cleaner

An airless blast cleaning method using controlled centrifugal force for its blasting power through use of the Pangborn Rotoblast is described in 24-p. catalog. *Pangborn Corp.* For more information, check No. 1 on the postcard.

### Circle Shears

Circle shears used for cutting circular blanks, disks, or circular arcs of sheet metal by rotating the blank around a fixed center while the cutters feed along a circular course, are described in 4-p. photo-illustrated catalog. *Niagara Machine & Tool Works.* For more information, check No. 2 on the postcard.

### Flak Shield

The Dilley Flak Shield designed for the protection of the hands, arms, necks, and faces of production machinery operators is described in 4-p. catalog. *Dilley Mfg. Co.* For more information, check No. 3 on the postcard.

### Metal Mold Coating

A new centrifugal casting technique utilizing a refractory coating for metal molds that permits more exact and orderly distribution of metal in the spinning mold is explained in 6-p. folder. *U. S. Pipe & Foundry Co.* For more information, check No. 4 on the postcard.

### Chain Hoists

Hoists of the trolley, spur-gear, Navy screw-gear, and differential types; and portable, jib, and travel-

**New publications that describe money saving equipment and services are available free and without obligation. Copies can be obtained by filling in the attached card and mailing it.**

ing cranes are described in 44-p. folder. *David Round & Son.* For more information, check No. 5 on the postcard.

### Freight Elevators

How to integrate the selection of freight elevators with the material handling plant layout along with elevator capacity specifications are presented in 44-p. Westinghouse freight elevator buying guide. *Westinghouse Electric Corp.* For more information, check No. 6 on the postcard.

### Anti-Friction Die Sets

Designed for longer die life, better stampings, lower manufacturing costs, and uninterrupted production, Lempco precision anti-friction die sets are described in 64-p. brochure of tables, specifications, and photos. *Lempco Products, Inc.* For more information, check No. 7 on the postcard.

### Plastics Molding Press

The Stokes model 723 self-contained, semi-automatic general purpose plastics molding press designed for molding large parts having deep draws and heavy sections such as radio cabinets, telephone bases, toaster bases and similar

pieces is described in 4-p. catalog. *Stokes Machine Co.* For more information, check No. 9 on the postcard.

### Research Facilities

For the small manufacturer who cannot spend large sums for research, the facilities of a large university for the solution of industrial problems and the development of new materials, processes, products, and services are described in 24-p. photo-illustrated brochure. *Research Div., College of Engineering, New York University.* For more information, check No. 8 on the postcard.

### Lubrication Systems

The Farval centralized system of lubrication, delivering oil or grease, as frequently as desired, under pressure and in exact measured quantities, to a group of bearings, is described and illustrated in 16-p. catalog. *Farval Corp.* For more information, check No. 10 on the postcard.

### Automatic Oilers

Suggestions on how the waste and dangers of hand oiling can be eliminated, production increased,

Turn to Page 87

THE IRON AGE

*Left—5 of the 55 pieces of luggage in the smart Samsonite line. All are now equipped with lustrous, solid brass fittings to make Samsonite Luggage look better longer.*

## Samsonite Luggage

SWITCHES TO SOLID BRASS FITTINGS... TO MAKE THE "WEAR SPOTS" ON ITS LUGGAGE STAY SMARTER LOOKING LONGER.

**Revere Brass Strip selected for its unusually fine, uniform grain after hardware is formed.**

● The name Samsonite has become synonymous with quality luggage the country over. It has a reputation to uphold. For that reason, when the brass plated fittings with which this luggage was initially equipped, started to tarnish and show signs of premature wear, the Samsonite people did a double-take. After consulting with their own engineers and the Revere Technical Advisory Service it was decided that nothing less than solid brass would be in keeping with so fine a line of luggage. Revere Brass Strip, because of its very fine uniform grain, was selected for the job.

Samsonite was extremely pleased with the results. They found that after the luggage hardware was formed it had just the lasting, lustrous quality they were looking for. A fitting companion for the smart Samsonite cases. Now, all external hardware and the internal fittings, where rusting would be detrimental, are of solid brass. Even the keys, usually stamped, are of solid brass, coined and milled.

Perhaps Revere Brass or some other Revere Metal can be of help in improving your product—cutting your production costs. Why not tell Revere's Technical Advisory Service about *your* metal problems? Call the Revere Sales Office nearest you today.

### REVERE

**COPPER AND BRASS INCORPORATED**

*Founded by Paul Revere in 1801*

230 Park Avenue, New York 17, New York

*Mills: Baltimore, Md.; Chicago, Ill.; Detroit, Mich.; Los Angeles and Riverside, Calif.; New Bedford, Mass.; Rome, N. Y.—Sales Offices in Principal Cities, Distributors Everywhere.*



# On the ASSEMBLY LINE

## AUTOMOTIVE NEWS AND OPINIONS

Many auto records broken in 1949 . . . Trend toward "automation" is growing . . . Buick introduces shorter cars for 1950 with the same wheelbase . . . Dodge is well received.



by

*Walter G. Patten*

**Detroit**—Automobile executives will look back on the year 1949 with considerable satisfaction.

According to the Automobile Manufacturers Assn. total output reached an all-time high of 6,200,000 new passenger cars, trucks and buses. This is an average of one new vehicle for every second of every working day during the year.

### **Sales Pattern Differs**

The industry established a new record for cars on the highway. Gasoline consumed for motor travel reached a new high. Production charts for the year show

that no single month fell below the 320,000 mark. The high point was reached in August when 657,664 vehicles were assembled.

The prewar auto sales pattern is not yet here. Ordinarily, automobile sales start slowly in January, spurt during the spring months and reach a peak during June. The sales curve normally then falls throughout the remaining months of the year, receiving some stimulation when new models are introduced late in the year.

In 1949, August and September were the biggest sales months. It is significant that these biggest months occurred *after* the recession talk heard last summer.

### **Some Production Declines**

Some segments of the industry, however, have fallen off appreciably. Replacement parts production dropped approximately 20 pct during 1949 as compared with a year earlier although there was a noticeable pickup during the final 2 months. Truck sales also slumped seriously during the early months of 1949. Here, too, there was a substantial recovery late in the year.

The "dollar shortage" had a serious effect on exports. Only about 280,000 new motor vehicles

were shipped abroad during the year. This is less than 5 pct of total production and a drop of 36 pct compared with 1948.

The average age of cars on the road today is now approximately 8.4 years, showing a slight decline from 8.8 years reported in 1948 and 9 years for 1946. Prior to the war, the average age of U. S. passenger cars was 5.5 years.

Many interesting developments were observed in automobile plants during the past year. Much of the doubt about the ability of transfer machines to deliver under production conditions seems to have vanished. The automobile industry appreciates the fact that there are limitations on automatic metal-processing equipment. However, these limitations are much better known today. The trend toward automation is particularly strong in the case of engines. A similar movement seems to be developing in automatic transmissions.

### **Engine Changes Expected**

The industry's adoption of high compression engines is today virtually complete. Studebaker recently placed its first tooling for a V-type high compression engine. Chrysler is expected to make sim-



*Now!* More picture per dollar!

*says G.E.*

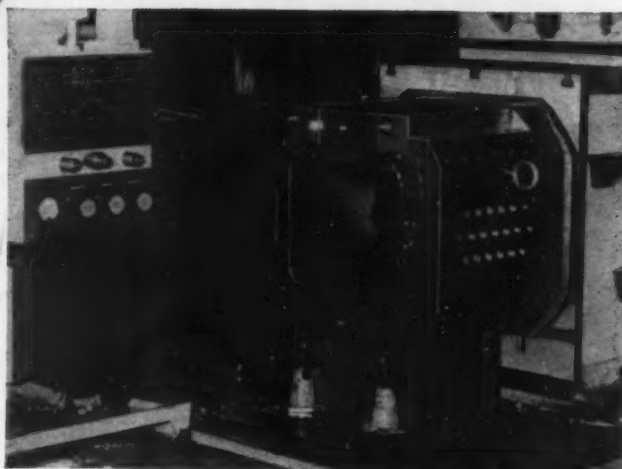


*Now!* More mold per dollar!

*says P&W*

Pratt & Whitney Kellering translates General Electric's design-ideas into the smart, sturdy cabinets that house their good-looking TV Sets. The intricate plastic molds that form these cabinets are duplicated accurately from models on the type BG-1 Keller Machine pictured above.

Kellering is heavy-duty, tracer-controlled milling — the most modern, efficient, economical way to accurately and automatically produce dies and molds from wooden or cast models. P&W makes the Keller in all types and sizes for 2-dimensional and 3-dimensional work. It will pay you well to look into Kellering. May we send you descriptive Bulletins?



Top: Mold for TV Cabinet set up on the Keller BG-1.

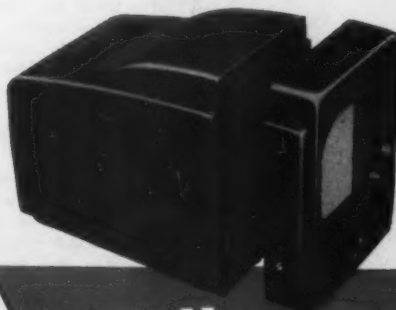
Right: An indication of the precision required by G.E.'s die and mold shop.

Below: Plastic Cabinet for G-E Model 805 TV Set.



**Pratt & Whitney**

Division Niles-Bement-Pond Company  
WEST HARTFORD 1, CONNECTICUT



**Keller Machines**

ilar decisions early in January. It will surprise many Detroiters if Ford does not equip its 1951 models with a new engine of the high-compression type.

The drive toward automatic transmissions is intense. Oldsmobile has recently made important design changes. The performance of the Chrysler semi-automatic unit has been stepped-up. Chevrolet will introduce its new unit early in 1950. Ford will be in production at Cincinnati by June. Packard has reached volume production on its Ultra-Matic unit and Studebaker will present its new transmission early in 1950. The end of the year should see practically all producers of passenger cars either in actual production or committed for an automatic transmission program.

### Buick Introduces Shorter Cars With the Same Wheelbase

Among the features of the 1950 Buick line of cars are a new F-263 engine, new styling similar in many respects to the Buick Special introduced last August, more glass area, bodies that are a half-in. lower and have less overall length than previous models, and the introduction of both "Jetback" and "Tourback" series in the Special series.

(The term "Jetback" is synonymous with "Streamlined" or "Fastback" design and the "Tourback" is the same as the "Notchback" or "Bustleback" in other lines of cars.)

The bumper-and-grille combination will be used on all 1950 Buicks. This design has permitted shortening of the Super, for example, by 5 $\frac{3}{8}$  in. without sacrificing wheelbase length.

Compression ratio of the new F-263 engine is 7.2 to 1 against 6.9 to 1 previously used. The bore has been increased from 3  $\frac{3}{32}$  to 3  $\frac{3}{16}$  in., resulting in a displacement of 263.3 cu in. compared with 248.1 previously used.

### New Frames Are Stronger

Additional frame strength has been gained from reinforced side rails. Buick frames are now virtually all-welded construction.

Changes in design and positioning of the rear wheels has permitted hip-width increases in the rear seat up 13 in. in the Super four-door sedan. Stronger box section construction in the roof rails has made possible the use of a narrower windshield and center pillars, smaller rear quarter panels and larger rear windows.

Fore and aft flash-way signal lights are standard on the Super and Roadmaster series. The front

signals are housed in the bumper guards.

Engine changes include a decrease in the cylinder-crankcase height of  $\frac{5}{8}$  in., shorter connecting rods and a decrease in piston length of 9/16 in. The new crankshaft is uniform in diameter.

Stainless moldings with chromium flash are used extensively. On the new Tourback, a belt molding encircles the upper part of the car. New moldings encase the windshield and backlights on many models. Extensive precautions have been taken to prevent rust and to provide proper drainage.

While total windshield area is increased, windshield height has been decreased to improve protection against glare and sunlight. The blind spot in the rear of the Super sedan has been decreased 17 pct at the driver's eye level.

### Dodge Changes Extensive; Orders Exceed Available Supply

Typical of many popular improvements in the 1950 Chrysler cars are the styling and engineering changes in the new Dodge.

The rear of the car has been extensively restyled, permitting a complete redesign of the rear fenders which, it is reported, are made in two pieces and assembled by welding. Rear window area has been increased up to one third.

The front grille is of simple design. It is also lower and of the parallel-bar type. The grille is made of nine separate stampings which may be replaced individually, a feature that is sure to be appreciated and may be widely copied.

Each of the cars in the Chrysler line retains the same roominess, ample head room and ease of entrance and exit that characterized the 1949 lines.

The prominent light and front grille assemblies have been replaced by smaller, less obtrusive designs on all models.

The 1949 bumper design has been changed significantly. Bump-

Turn to Page 70



**NEW TYPE AUTO SEAT:** The 1950 Ford cars have this new front seat spring construction which virtually eliminates sagging. The springs are covered with cotton and 1 $\frac{1}{4}$  in. of foam rubber. An outstanding advantage to the car producer is the saving in shipping space made possible by the new type construction.



# LYON

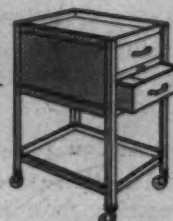
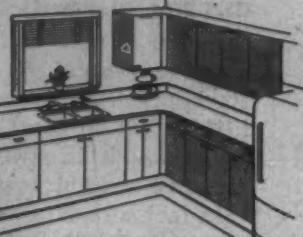
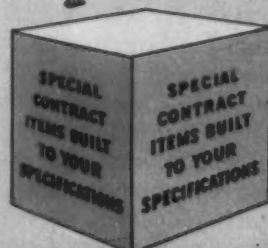
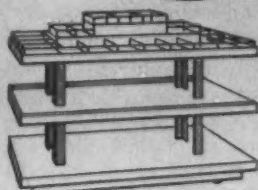
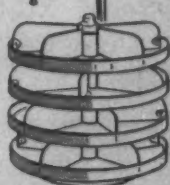
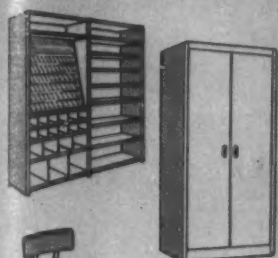
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- Sorting Files
- Revolving Bins



# THE FEDERAL VIEW

THIS WEEK IN WASHINGTON

**Hasty decision to hold steel price inquiry may be regretted . . . United States is underwriting big housing programs abroad . . . Holland using many prefabs.**



by

*Eugene J. Hardy*

Washington—No time is a good time to increase steel prices. This rather trite statement seems to apply to the Congressional reaction to all price increases on steel since the end of World War II.

In March 1948 with a decidedly inflationary outlook still facing the country, the steel industry increased prices and promptly found itself dragged before the Republican controlled Joint Economic Committee headed by Sen. Taft, Rep., O.

Now with deflationary trends of much more concern than those which portend further inflation, the same committee, but this time headed by Democratic Sen. O'Mahoney of Wyoming, a long-time critic of the steel industry, will again hold hearings on the allegedly "unjustified" price rises.

## May Regret Hasty Action

It is little wonder that steel management is becoming most irritated at being dragged to Washington to explain what should be normal, everyday decisions encountered in running a business.

There are indications, however, that Sen. O'Mahoney may be be-

ginning to regret his hasty action in calling hearings on the steel price increases. Staff members of the Joint Economic Committee who are engaged in gathering data for forthcoming hearings on the price increases are finding little within the executive agencies to support the Senator's position. For example, one prominent government economist told THE IRON AGE that, "The steel industry's primary mistake is that it did not raise prices as much as producers of other basic commodities. If it had done so during the early post-war period, none of this furor would ever have been raised."

## BLS Not Alarmed

In the Bureau of Labor Statistics the general feeling is that steel price increases will have little effect on the Cost-of-Living Index which is still expected to continue a slight downward trend.

In fact, any data which the committee staff gathers from the fact-finding agencies of the government will only serve to show that steel prices have not advanced as much as wages and other basic commodities. It would also show that re-

cent increases in freight rates and the new added pension costs are important factors necessitating an increase in the price of steel. Neither of these can be accurately calculated at this time.

## Memo to O'Mahoney

Among the things the Senator may have forgotten is that even the White House in 1946 recognized the fact that increased labor costs mean higher prices for steel. This recognition came through White House approval of an OPA increase in the price of steel amounting to about \$5 a ton before Phillip Murray's wage demands were met.

Mr. O'Mahoney who is conducting another investigation designed to determine why sources of investment capital are drying up is also vulnerable in this regard. The question might well be asked, "How can potential investors regain their confidence in the market when they find business decisions being kicked around in the political arena."

On the House side of Capitol Hill, Rep. Celler, Dem., N. Y., chairman of the House Judiciary



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Committee, expects to give his lagging anti-monopoly investigations a shot in the arm by also tearing into the steel industry. President Truman recently dulled the edge of Mr. Celler's investigation by approving Commerce Secretary Sawyer's new campaign.

#### Celler Pours It On

Mr. Celler terms the price hikes an act of "social irresponsibility," and says that as far as U. S. Steel was concerned, the company's "heedless action boldly points the need for a reexamination of the prerogatives of bigness."

The fact that several steel companies announced price hikes within a week's time is a clear demonstration of price leadership, Mr. Celler said. He ignored the fact that some of the smaller companies advanced prices well before U. S. Steel took such action.

So the steel industry will again be nailed to the political cross with nothing coming from the whole procedure other than giving new ammunition to those who would change the traditional American way of doing business.

### U. S. Underwriting Big Housing Program Abroad

Using Marshall Plan aid, both directly and indirectly, the United States is underwriting a housing program abroad which rivals its own 800,000 unit public housing program recently authorized by Congress.

Nearly all ECA countries are affected to a lesser or greater extent. These include Britain, where 240,000 units have been completed, France, where about 100,000 have been built, an Italian program for 900,000 rooms, and Austria, Norway and The Netherlands.

Marshall Plan aid has been uppermost in financing not only raw materials for this end use but in providing construction equipment. This includes \$93 million of lumber and \$450 million of aluminum, copper and other nonferrous metals.

#### Marshall Plan Helps

Support of Marshall Plan dollars has especially been thrown behind industrial housing projects. These include several thou-

sand units in the French mining areas and the SOLLAC steel center. ECA dollars pay for at least half the coal for the making of Austrian brick, tile, etc., and for all copper wire and insulation materials.

Some \$100 million in counterpart funds have been released for housing expenditures. About 25 pct of this total is being put into a Greek project to provide about 30,000 units. Italy will make use of about the same amount for its "Fanfani plan." It is planned to make about \$70 million available in The Netherlands, where housing problems are most serious.

#### Dutch Using Prefabs

Whether from necessity or other reason, Holland has been stepping up its use of prefabricated housing at a time when such dwellings are receiving a lukewarm acceptance in the United States. Nearly 10 pct of new Dutch housing this year will be of the prefab type.

In addition to housing its expanding population, Holland faced the postwar job of replacing 85,000 completely-destroyed homes. This means an average of 60,000 units a year until at least 1960. Prefabs furnished part of the answer to a country where building materials are scarce. In 1948, new home construction amounted to about 35,000 units including 1700 prefabs. It is likely that home output will amount to 40,000 units in 1949, of which 3500 will be prefab.

So far, most of the Dutch prefabs have been imported from Sweden, but it is not unlikely that with ECA help Holland may launch its own prefab manufacture.

### CAA Pushes Small Planes

A plane for every farm might well become a familiar slogan in the not too distant future. The Civil Aeronautics Administration is sponsoring—technically and financially—the development of a light plane especially suitable for rural use.

Spurring the CAA effort in this respect is the fact that commercial

Turn to Page 70

### THE BULL OF THE WOODS

By J. R. Williams



# How Reliance Aids Sheet and Strip Users



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# WEST COAST PROGRESS REPORT



**Christmas gifts to western industry take form of a year well done and better prospects ahead . . . Copper outlook improves.**

## Digest of Far West Industrial Activity



by

*J. Reinhardt*

San Francisco — There were a lot of presents that western industrialists had wishfully hoped to get from Santa earlier this week which failed to materialize but it is doubtful if there were very many broken hearts. The iron and steel business takes strong hearts as well as strong backs and keen brains.

While it is illegal to pry into anyone's mail—even that addressed to Santa Claus — through devious means we have learned what some of the top executives in the industry of the West hoped to find under their Christmas trees.

### Executives' Hopes Given

Alden Roach, president of Columbia Steel Co. and Consolidated Western Steel Corp., undoubtedly could use an identical twin to assist in covering the geographically widespread activities and interests of his two corporations.

Unquestionably H. H. Fuller, president of Bethlehem Pacific Coast Steel Corp., wrote asking Santa to speed up completion of the 75-ton electric furnace now under construction at the Los Angeles plant and for the early oper-

ation of the new steel fabricating unit being built at Seattle.

Probably the only thing Henry J. Kaiser, president of Kaiser Steel Corp., requested was increased steel capacity at his Fontana plant, which already is operating at well over 100 pct of rated capacity, to provide the ingots for the new 86-in. hot-sheet mill soon to be put into operation.

### Producers Lack Imagination

Walther Mathesius, president of Geneva Steel Co., has just about whatever the well-behaved steel executive should possess, but there is a belief that he might well have asked St. Nick to deliver into his

hands a few more eager buyers for his structurals.

Prying into mail destined for the North Pole emanating from the offices of some of the smaller steel producers shows a complete lack of imagination for the most part with here and there a request for additional temporary financing for the installation of a new furnace or two or rehabilitation of a wheezing rod mill. In spite of shortages, strikes and governmental restrictions, both producers and workers had little cause for complaint as the year drew to a close. Operating rates for the year were as high, on the average as in any peacetime year and tonnage-wise the West did more than its share to bring the year's steel output to the third largest in peacetime history.

Metal users of this area were probably less affected by the coal and steel strikes than anywhere else in the country and employment in this field continues high indicating the growing importance of the industry.

### Bethlehem Announces Prices

The pre-Christmas present of a price increase from producers to users, while unwanted and unasked for, was not too bitter a pill to swallow. Most recent increases were announced by Bethlehem Pacific on such items as these: Carbon steel and reinforcing bars at Los Angeles went up 10¢ per 100 lb to \$4.15 and up to \$4.20 per 100 lb at South San Francisco and Seattle; hot-rolled alloy bars went from \$4.80 to \$5.00 per 100 lb at Los Angeles; universal plates at Seattle went from \$4.30 to \$4.40; and structural shapes rose from \$3.80 to \$3.95 per 100 lb at San Francisco; from \$3.85 to \$4.00 per 100



lb at Los Angeles, and from \$3.90 at Seattle to \$4.05 per 100 lb. No increases have been announced for such products as bright wire, hot-rolled strip, or wire rods.

#### Building Boom Continues

There were a number of bright spots on the eve of Christmas which gave industrialists some cause for the traditional feeling of good cheer. California continues to lead all other states in the total value of new construction as it has every year since 1940, according to the U. S. Dept. of Commerce, and during the first 9 months of 1949 one out of six of the nation's new private homes was built in this state representing an expenditure of \$802 million or 50 pct of the value of all new construction in the state.

While there has been a decline in the California residential construction during the past year this decline has been offset by an increase of about 37 pct in the value of new public construction. This is a material increase over the national increase of 27 pct. Compared with the corresponding period last year, California expenditures for public non-residential work have virtually doubled in the first 9 months, rising from \$64 million in 1948 to \$126 million this year.

#### Construction Outlook Promising

The bureau reports that the national construction outlook for 1950 is even better than for 1949 in terms of dollar volume of new construction to be put in place.

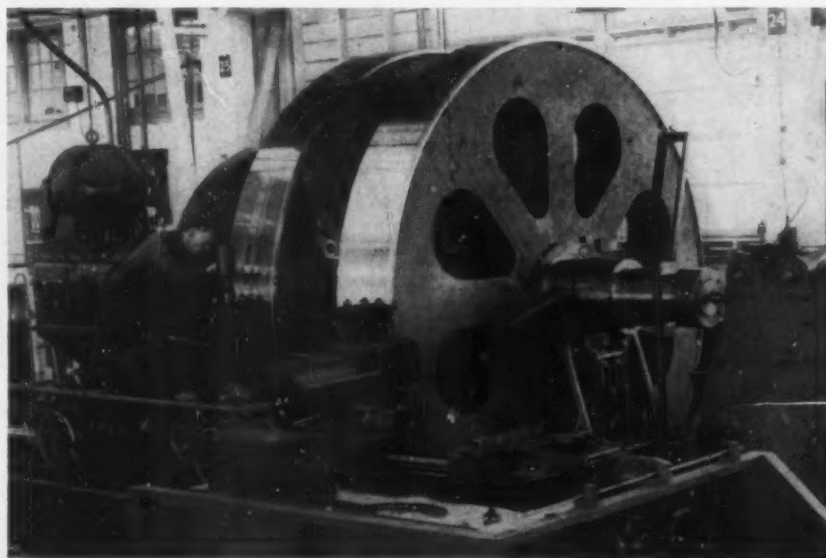
Western steel producers, fabricators and contractors are urging construction of hotels, apartment houses, office buildings and other similar large structures in the near future, pointing out that in spite of heavy construction already under way, in these instances facilities have not equalled the influx of potential tenants and that all such facilities at present are filled to capacity.

#### Industrial Development Up

Los Angeles County continues to boast of its increase in industrial development and reports that up to the middle of December 10,000 new jobs have been created this year

and that the area is a market for tools and raw materials of industry of such volume that it is exceeded only by markets in 11 different states.

The Bay area claims that it now outranks 35 individual states in the automotive market by pointing out that registration in the nine Bay area counties was greater than



**PROPULSION GEAR:** Wheels for ship-propulsion bull gears must be accurately aligned and machined to tolerances as close as 3/10,000 of an in. Here the final stage of a lathe operation is shown at the Sunnyvale, Calif., plant of Westinghouse Electric Corp. A machinist is inscribing a target patch on the wheels. This is to indicate the location of a line only 0.003 in. wide that is used for lining up the helixes in the hobbing that follows.

the 1949 motor registration in any one of these states or the District of Columbia.

It is doubtful if Santa Claus ever delivered the expected quota of gifts to anyone, but there is plenty of evidence to indicate that western industrialists have fared far better than most "poor relations."

#### Kennecott Expected To Go Back on a 48-Hr Week

Salt Lake City—In response to a strengthening demand for copper, Kennecott Copper Corp.'s Utah and Nevada properties were expected to go back on a 48-hr week operation Dec. 26. Since last May the mines and mills have been operating on a 40-hr work week with a 2-day shutdown each 2 weeks.

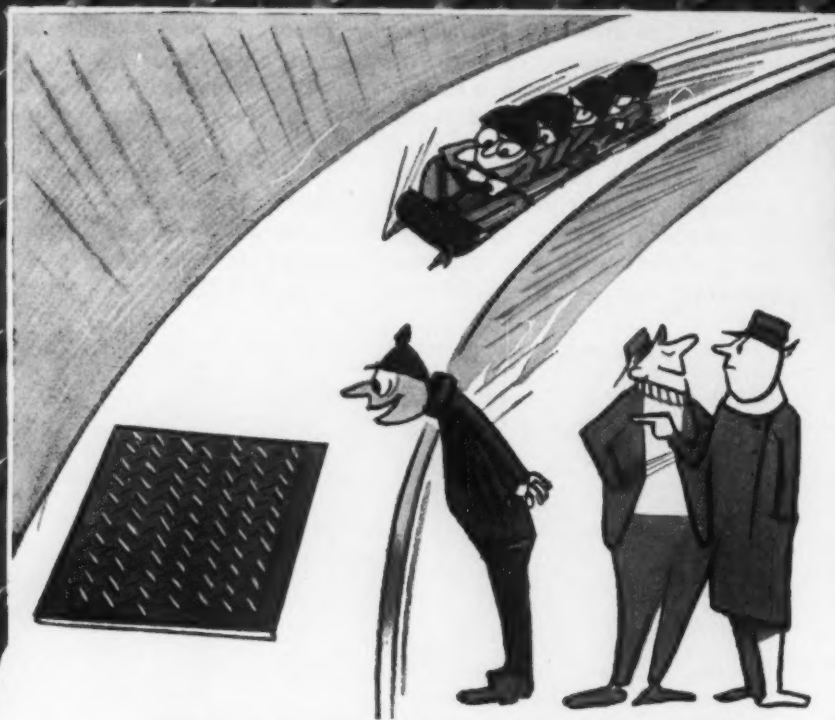
Under the new schedule the shut-down days will be eliminated.

The change will increase the pay of the workers by approximately 30 pct.

The Kennecott announcement was one of the few bullish developments in the nonferrous metal mining industry in this area since prices started falling last spring. Two

major Park City operations were closed at that time and are still closed. The state industrial commission has attempted to work out a plan for reopening the mines but it has been unable to come up with anything thus far which the operators deem to be practical. It is unofficially reported that the union, now affiliated with the United Steelworkers, is considering a wage reduction if the companies can show that they are unable to operate at a profit under the old wage scale.

Outlook for completion of facilities to produce refined copper is brighter as American Smelting & Refining Co. resumes work on its anode plant near here and the Kennecott refinery estimated to cost approximately \$15 million is scheduled for completion by the middle of 1950.


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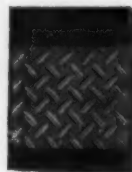
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## *Electric Steel Furnace Meeting*

# Automatic Controls Increase Furnace Output

**SUMMARY: 600 members of AIME's Electric Furnace Committee, meeting in Pittsburgh, discuss operating and metallurgical phases of electric steel making. Presented herewith are abstracts of papers covering advantages of automatic controls in raising output, induction stirring of the bath, and effect of large transformers on rate of production.**

**T**HE best brains in the electric furnace phase of steelmaking, both from an operating and a metallurgical standpoint, exchanged views on recent developments in the field at the three-day seventh annual conference of the Electric Furnace Steel Committee of AIME held recently in Pittsburgh.

Some 600 leaders in the industry were welcomed by J. A. Bowers, conference chairman, and Norman I. Stotz, chairman of the Electric Furnace Steel Executive Committee. Mr. Bowers will replace Mr. Stotz as committee chairman for the 1950 meeting, opening here Dec. 7, while T. J. McLaughlin, Carnegie-Illinois Steel Corp., will serve as 1950 conference chairman. R. H. Frank of Bonney-Floyd Co., Columbus, O., will be conference vice-chairman.

Nearly 60 papers were presented at the conference. They dealt with materials handling,

temperature and composition measurements, operating improvements, use of oxygen and other gases in electric furnace melting, electric furnace refractories and the chemistry of electric furnace steelmaking. All sessions were well-attended.

Of particular interest at this meeting was the discussion of the use of large transformers on rate of production. Papers on this subject prompted enthusiastic discussion on the production of open hearth grade steels in the electric furnace. Although no conclusions were reached, the question was raised that the day may be approaching when electric furnace costs in producing these types of steels will compare favorably with open hearth costs.

James W. Kinnear, Jr., president, Firth Sterling Steel & Carbide Corp., was toastmaster at the annual dinner. Gene Flack, director of ad-



vertising, Sunshine Biscuits, Inc., was the speaker.

A discussion of some of the papers presented at the meeting follows.

Based on experience with 50 heats, a 16 pct reduction in melting time from tap to first preliminary was realized by increasing power input from 12,000 to 16,000 kva, according to H. E. Phelps, electric furnace superintendent, Rotary Electric Steel Co. Detroit. Rimmed steel was the product.

In a discussion of factors for improving power consumption, L. A. Wynd, electrical superintendent, Republic Steel Corp., Chicago, presented data indicating the advantages of employing automatic current settings as compared with results obtained using manual control.

The furnaces represented in Wynd's presentation were duplicate; each was a 70-ton 20-ft shell, Heroult type, powered with a three-phase, 12,000 kva transformer having secondary voltages of 124, 159, 200, 230 and 275. Automatic control is used only on the three highest voltages. Twenty-inch graphite electrodes were used throughout.

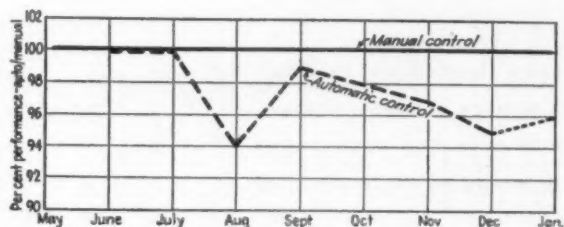


FIG. 1—Index of performance; kw-hr per ton for furnaces with automatic control v. furnaces with manual control.

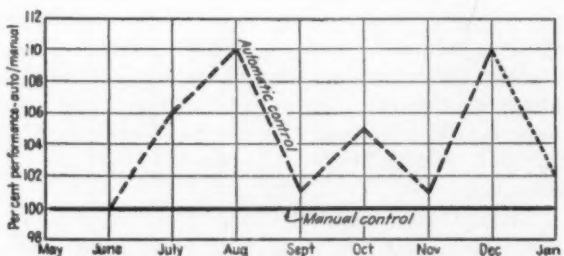


FIG. 2—Index of performance; tons of steel (all grades) per furnace-hour for furnaces with automatic control v. furnaces with manual control.

Typical results obtained are shown graphically in figs. 1 and 2, where indices of performances reveal greater production rate and lower power consumption arising from furnaces with automatic control.

Supplementing Wynd's paper was a discussion

by R. M. Bayle, consulting and application engineer, Westinghouse Electric Corp., Chicago, on Optimelt automatic recalibrating control for arc furnace regulators.

Bayle demonstrated that in every case there is an optimum value of arc current that produces maximum arc kw for that particular secondary voltage.

This value of arc current is always less and the power factor is always greater than a similar arc current and power factor for the point of maximum circuit kw for that particular voltage.

The lesson the electrical engineer draws from these fundamentals and passes on to the operating man is that there can be no sound reason for operating at an arc current beyond that which results in maximum arc kw. He merely pours additional and expensive kilowatt hours into circuit losses which do not melt steel.

Bayle pointed out that there is reduced efficiency in operating at a point much below this optimum arc-current value. Even though the power factor is higher, the actual reduction in melting heat desired can be obtained much more efficiently by going to a lower voltage tap.

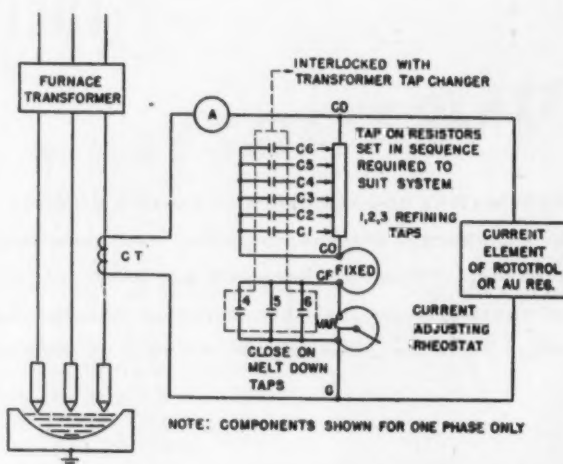


FIG. 3—Simplified schematic diagram of Optimelt control.

A simplified schematic diagram of a representative Optimelt control circuit is shown in fig. 3. This arrangement is drawn to show the control of three melting and three refining voltage taps and is perhaps the maximum control any operator would find practical to use. Only one phase of the current regulating portion of the arc-furnace regulator is shown. While all arc-furnace regulators have voltage elements, in this particular case the concern is with current adjustments only.

A discussion of inductive stirring in arc furnaces was presented by Sven Fornander, research manager, Surahammars Bruks AB, Surahammar, Sweden, and Folke Nilsson, general manager Hagfors Steelworks, Uddeholms AB, Uddeholm, Sweden. This method, previously

described,<sup>1</sup> has been in operation for 1½ years in two Swedish steelworks.

<sup>1</sup> E. S. Kopecki, "Induction Stirring in Electric Furnace Steelmaking," THE IRON AGE, Sept. 22, 1949, p. 73.

The trend towards more and more power input for high speed melting was discussed by S. J. Myford, melt shop superintendent, Copperweld Steel Co., Warren, Ohio, and W. M. Patterson, electric furnace superintendent, Allegheny Ludlum Steel Corp., Brackenridge, Pa.

According to Myford a study of about 100 transformers installed in recent years in electric melting furnaces of 50-ton capacity and above, show that there has been a steady increase in kva rating from 10,000 to 20,000, and, in one case, a greater value. At the same time there has been a corresponding increase in secondary voltage from 220 to 350 v, and in one case a voltage as high as 440 v is being installed or in use, and on an experimental basis a voltage as high as 500 v was tried but could not be maintained. The principal reason for the increase in voltage has been to keep within the maximum current and kw rating that could be put into the steel in the furnace.

The transformer in the new furnace at Copperweld is rated at 16,000 kva with a high secondary voltage of 350 v. It is designed, however, to be connected with an auxiliary step-up transformer in the primary supply and a rating of 25,000 kva, with a high secondary voltage of 450 v can be obtained if necessary.

Fig. 4 shows the outstanding item of development in the trend of furnaces at Copperweld from 1939 to 1948. This has been brought about because during this period the melting scrap has become lighter and lighter and charging more time-consuming and difficult. Note in the figure that the scrap-holding capacity for the same size of furnace has been increased nearly 40 pct.

There was some objection to the increase in height of furnace shell because it was thought that kilowatt hour per ton and electrode consumption would be increased. In actual practice, the reverse is true; kilowatt hour per ton values have dropped; the electrode consumption has not increased; and the life of the roof has been increased to a remarkable extent.

The melt shop at Copperweld has been handicapped by a limitation in crane capacity and power supply, but a production experiment conducted during a 48-hr period, over a weekend, resulted in an average heat time, tap to tap, of

3 hr 12 min (see table I). All the steel made during this test was specification steel of first class salable quality and the tonnages are the net ingot weights. A net average of 15 tons per hr was realized in the 48 hr, in a furnace which for shop reasons can make only 48-ton heats.

The fastest heat yet made at Copperweld is a 43-ton heat, made in 1 hr 40 min, tap to tap,

TABLE I  
Heat Time Data for 48-Hr Production Test with High Speed Melting

Heat No.	Time Tap to Tap	Heat No.	Time Tap to Tap
31,243	4 Hr 5 Min	31,250	3 Hr 15 Min
31,244	2 Hr 40 Min	31,251	3 Hr 10 Min
31,245	4 Hr 10 Min	31,252	3 Hr 30 Min
31,246	3 Hr 10 Min	31,253	3 Hr 45 Min
31,247	2 Hr 35 Min	31,254	3 Hr 5 Min
31,248	3 Hr 10 Min	31,255	2 Hr 40 Min
31,249	3 Hr 10 Min	31,256	3 Hr 0 Min
		31,257	3 Hr 10 Min
Average Time—Tap to Tap ..... = 3 Hours and 12 Minutes			
Total Tons of Sound Ingots ..... = 718.2			
Net Tons per Hour ..... = 14.9			

including repairing of bottom, charging, recharging and a short period of power cutoff by the power company.

In the new melt shop at Allegheny Ludlum, two furnaces have been put into operation, utilizing 16,000 kva and 350 v at top voltage. They are 18-ft Swindells tapping 70 to 80 tons, depending on size of ingots and grade of steel being made. The furnaces were installed with production of rimming steel primarily in mind. They are amplidyne controlled and the amplidynes are so set as to give maximum power input with the rheostat fully advanced rather than to have the power set on each voltage.

One of the greatest difficulties at present is the loss of roof brick in the electrode circles. The long arc from the high voltage (or some other factor) is causing the inner ring to wear away at 75 to 100 heats.

Two design changes that have been advanced are; (1) the furnaces are installed on ground level, and (2) the control station—board and all—is stationed in the center of the shop rather than against the transformer wall. This location gives the furnace operator complete view of both doors (which are at 90°) and all three electrodes at a glance, and also eliminates the necessity for relaying directions during operations.

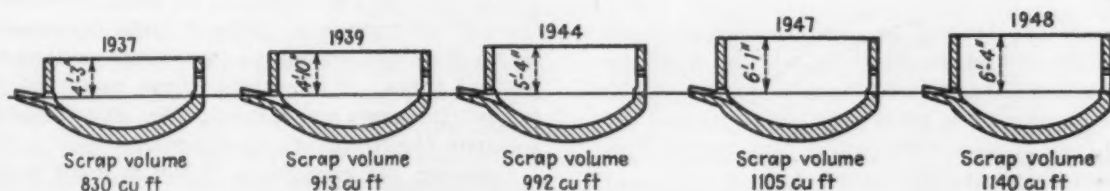


FIG. 4—Development in design of the 16-ft electric melting furnace for high speed melting.

# **MANUFACTURING CONTROLS OF LARGE STEEL FORGINGS**

**By Todd Gardner**

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National Supply Co.,  
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**SUMMARY:** Because of the inherent characteristics of large ingots, careful control of heating and forging is vital to successful production of large forgings. Heating and cooling, deflaking and ultrasonic inspection methods are discussed.

**M**ANY metallurgical problems that need not be considered in forging small steel parts become important when producing large steel forgings. To obtain the proper reduction and hot forming for a sound finished product, large ingot sizes must be used. Even with the most careful control, these ingots may have an appreciable amount of segregation and a large dendritic pattern. If they are not handled correctly through the subsequent heating and forging operations, a damaged or inferior product will result. Heavy cross-sections produce large thermal gradients during heating and cooling, with resulting high internal stresses that are sometimes capable of cracking a forging from end to end. The most liberal fillets become danger points.

Successful control in manufacture depends upon the adherence to definite rules and the elimination of unnecessary operations that might be dangerous. The processes must be altered for each type of alloy steel, which may have different metallurgical characteristics.

Close scheduling should be maintained so that each ingot can be processed soon after its arrival

in the forge shop. Not only can the cost of the furnace time necessary to reheat the ingot be saved, but the hazardous operation of cooling and reheating be eliminated. As soon as the ingot has solidified and stripped from the mold, it should be placed in a furnace at nearly its same temperature. It can then be heated uniformly to forging temperature.

While low carbon steels usually require no special handling techniques, large forgings of alloy steel grades offer problems that can be solved only by strict adherence to definite heating and cooling cycles. Such defects as internal bursts, flakes, and heating and cooling cracks, which could appear, can be reduced to a minimum.

Years of experience gained at the National Supply Co. in the handling of many different types of alloy steels in different ingot sizes have led to the development of prescribed minimum heating times. While these times might be a subject for some controversy, they have proved adequate for National's operations.

Consider, for example, a 12,500 lb ingot with a maximum diameter of 24 in. The time necessary for heating all NE and SAE alloy grades



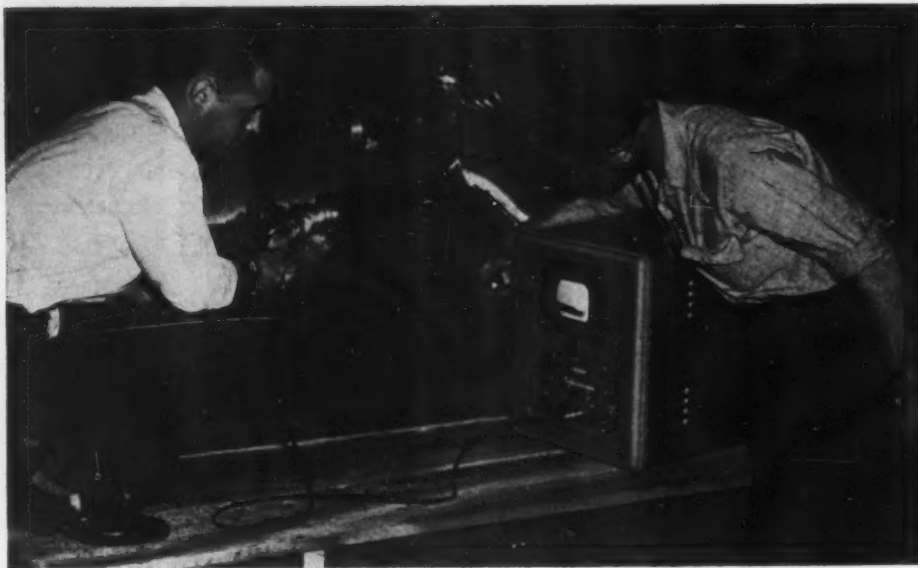


FIG. 1—An 8000-lb crankshaft being inspected with a Sperry Reflectoscope prior to final heat treatment. Todd Gardner, author of this paper, is holding the crystal while R. M. Peterson, Laboratory Technician, is inspecting the screen pattern.

under 0.50 pct carbon (with the exception of those containing over 1.5 pct nickel) from 1400°F to forging temperature is 3½ hr. For steels such as SAE 4340, the time required is 5 hr. The time is increased to 6 hr when handling steels similar to SAE 52100. For 35,000 lb ingots with a maximum diameter of 40 in., the following times are used: NE and SAE grades, 5 hr; SAE 4340, 7 hr; and SAE 52100, 9 hr.

If by chance an alloy ingot has been allowed to cool to room temperature, it should be placed in front of a furnace door and allowed to absorb heat for at least 24 hr. After this, it may be placed in a cold furnace and brought to 1400°F. The time for heating through the critical range should be more than double the times prescribed for heating to forging temperature.

One of the most critical aspects of handling large forgings is cooling to room temperature after the completion of the hot forming operations. Improper cooling will result in the formation of flakes. Much work has been done in determining the cause and prevention of flaking in different types of alloys.<sup>1,2</sup> While there is much

to be learned about this subject, the use of a "deflaking cycle" has proved successful. Because of the expense and lost time involved in using this cycle, it is used only when experience shows that it is necessary. Generally, large forgings of carbon or alloy steels that are low in hardenability can be allowed to cool buried in sand. However, such grades as SAE 4340, 2335 and 4820, or alloys high in nickel, must receive the "deflaking cycle."

This treatment consists of allowing the forging to cool in air to a 600° to 700°F range and remain at this temperature for at least 6 hr. The forging is then heated to a range of 1200° to 1250°F, and held for at least 10 hr or 1 hr per in. of cross-section. It is then slow cooled to 400°F. SAE 4140 and similar types are sometimes given a regular furnace anneal to facilitate handling and to speed up production.

Because many defects found in large forgings are internal and do not show at the surface, adequate inspection is difficult. The intelligent interpretation of a macroetch specimen, however, can do much to determine the quality of a forging. Etch specimens are usually taken from the



FIG. 3—Microphotograph of the flake located by the Reflectoscope, indicated in fig. 2. Etchant, 2 pct Nital. 500X.

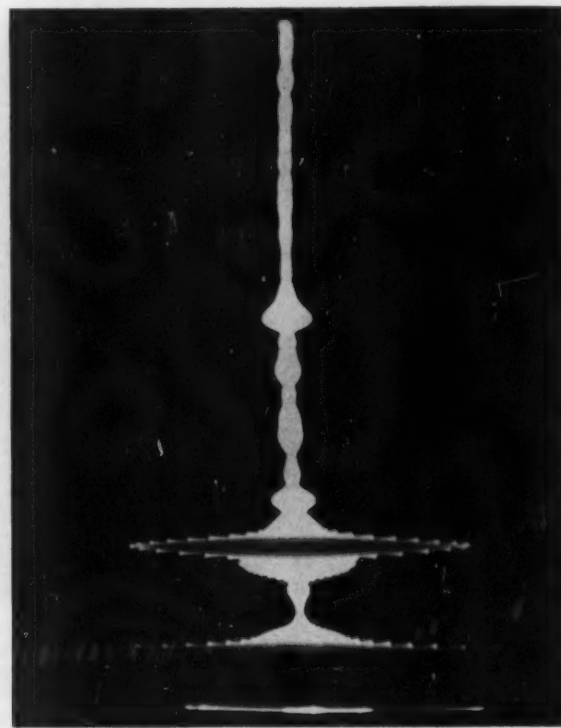


FIG. 2—This reflectogram shows the signal received from a flake in a 10-in. billet using a Reflectoscope with a  $2\frac{1}{4}$  mc crystal.

side nearest the hot top. The acid bath should be kept at full strength and at 160°F to insure uniform results. Such defects as flakes, pipe, seams and laps, stringers and inclusions are revealed.<sup>3</sup> If the macroetch shows the steel to be free of these defects, the forging is assumed to be of the same quality. However, it is sometimes advisable to take an etch specimen from the bottom crop.

Ultrasonic inspection offers a more complete method of determining the quality of a forging.<sup>4,5</sup> The size of the forging offers no obstacle because equipment now available will penetrate steel to a depth of at least 30 ft. Any defect such as an internal burst, flake, or pipe is readily found and the exact location determined. If inspection is done before the forging is machined, it might be possible to cut away a defective area. Ultrasonic equipment is capable of picking up many discontinuities that might not be detrimental. Large inclusions and changes in grain size will show a reflection. By reducing the frequency and

sensitivity of the instrument, an indication as to the seriousness of the discontinuity can be determined. Because this method of testing is relatively new, no standard methods of inspection have been devised yet. The operator must gain experience by actually sectioning through defects in scrapped parts and classifying them as to their importance. Because large forgings represent the expenditure of a large amount of both material and labor, the scrapping for discontinuities that are not harmful is to be avoided whenever possible.

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- <sup>3</sup> "Visual Examination of Steel," by G. M. Enos, *ASM*, 1939.
- <sup>4</sup> "The Supersonic Reflectoscope for Interior Inspection," by F. A. Firestone, *Metal Progress*, Vol. 48, No. 3, Sept. 1945, p. 505.
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# ***Machining Aluminum Gear Cases***

**SUMMARY:** High production rates of washing machine gear case parts are accomplished through the use of specialized semi-automatic machining lines at Easy Washing Machine Corp., Syracuse, N. Y. Installed since the war, these machining facilities not only meet production requirements, but hold close limits with a minimum of labor. Several lines for machining specific parts are described in this article.



By **HERBERT CHASE**  
New York

**G**REATLY increased demands for washing machines since the war have led the Easy Washing Machine Corp. to install new and highly efficient lines for the production of aluminum gear housings and certain mating aluminum parts. These lines not only have high capacity, but hold close limits and require a minimum of labor partly because equipment is semi-automatic in operation. The washing machine parts are shown in fig. 1.

Machining of the housing itself starts with the facing of the flanges at three openings on one

side and of locating bosses for subsequent operations, all the facing being done by a single cutter on the vertical spindle of an Ingersol milling machine, fig. 2. The cutter contains 20 carbide blades having a slight hook, is 12 in. in diam and turns at 700 rpm. Feed in 0.007 in. per blade per revolution, and a total of 1/16 to 3/32 in. of metal is removed.

Work is supported in three fixtures, resting on locating pads, and is automatically clamped by a pair of dogs. As the pads are near each end and the case is long enough to spring under cutter



pressure if not supported, a jack is provided under the center opening and rises automatically to provide this support after clamping occurs. As fig. 2 indicates, the three fixtures are mounted on the horizontal table, which rotates continuously, carrying the work under the cutter.

Table rotation is at such a rate that the operator has ample time to unload and reload each

is a Natco drill equipped with Scully-Jones floating tap holders and high speed steel taps that thread 19 of the holes produced in the prior Natco setup. Again, both machines run automatically and are loaded and unloaded alternately.

Castings are then ready for operations on the double-end Heald Borematic, shown in fig. 4. This machine has two double-spindle heads at one end and three single spindles with multi-tooled quills at the opposite end. The carriage is equipped with a two-place box-type fixture arranged for hydraulically clamping the piece, the fixture being arranged to index automatically 180° between the

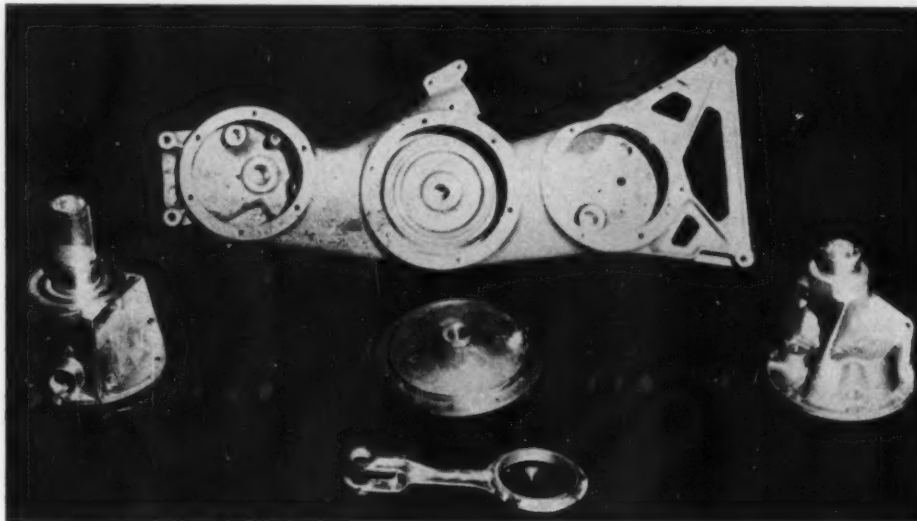


FIG. 1 — Machining of these sand cast aluminum gear-case parts, consisting of three covers and a connecting rod for Easy home washers, is done on highly efficient, semi-automatic machining lines.

fixture as it passes his station which is opposite the cutter. The latter is well inclosed by guards (removed when photo was taken) that prevent chips from flying about. A fine spray of kerosene is the only coolant required. With this setup, 150 castings an hr are milled, the operator having little to do save to take castings from a rack, load and unload them and place them in a roller chute that transfers them to the next machine.

In this second machine, a Natco multiple-spindle vertical drill, 29 holes, ranging in size from 0.200 to 0.959 in., are drilled. Castings are then passed to a Milwaukee mill, where side bosses are milled, and to a special machine on which there are six drill heads, of which three can be seen in fig. 3. After the piece is air clamped in this machine, six heads drill six holes automatically and then retract. The setup is so arranged that one operator handles this machine as well as the milling machine that precedes it. He has no difficulty in keeping pace with the milling operation shown in fig. 2, which, in effect, sets the pace for the entire line.

The next two machines are also handled by a single operator. One is a special unit nearly duplicating that in fig. 3 except that it taps the six holes previously drilled. The second machine

operations performed by spindles at opposite ends of the machine. After loading, the carriage moves the fixture toward the end having three spindles and the tools in these spindles make their cuts. While they proceed, the casting on the other side of the fixture is unloaded and another casting is loaded in its place.

When these cuts are completed, the carriage backs off and the fixture indexes automatically before feeding into the second set of tools at the opposite end, where both boring and facing cuts are made. Tools for holes up to 1 in. diam turn at 3600 rpm, and limits of  $\pm 0.0005$  in. are held. For larger holes of 4½ to 6-in. diam, the tool speed is 900 rpm and limits of  $\pm 0.001$  in. are held. Facing is done on the flanges around the large holes.

Final machining of the gear housing is done in the special machine, shown in fig. 5, equipped with five No. 30 Kingsbury heads synchronized to make their cuts in correct sequence. This machine is equipped with a carrier having a set of four fixtures. The carrier is indexed by hand 90° about a horizontal axis after each set of operations. Fixtures are on the radial faces of four crossarms, location of the work being from holes and faces finished in the prior cuts on the Heald



FIG. 2—In an Ingersoll vertical spindle milling machine portions of the top of aluminum gearcase are faced rapidly by a single cutter having carbide tipped blades.

machine. Loading and unloading are done at the front station while cuts are made automatically at the other three stations.

Operations performed on this machine are drilling, counterboring, spot facing and boring of the worm shaft hole, the work being done from both ends of the hole which is at an odd angle with respect to the casting but parallel to the flange faces used for location. It is essential that the holes finished by tools advanced from each end be truly coaxial, hence the final reaming operation, done at the topmost station, is critical.

In this reaming, the two tools do not cut simultaneously. A latch device is so arranged that the smaller end of the hole is reamed first by the tool entering from the top left in fig. 5. As soon as this reamer is withdrawn, that from the opposite end is advanced. On the end of this second reamer is a pilot bushing that advances into the hole just reamed before teeth further back on the second reamer make their cut. Thus, the second and larger reamer is piloted from the hole previously reamed and so must cut a hole coaxial therewith. In the original setup, both reamers

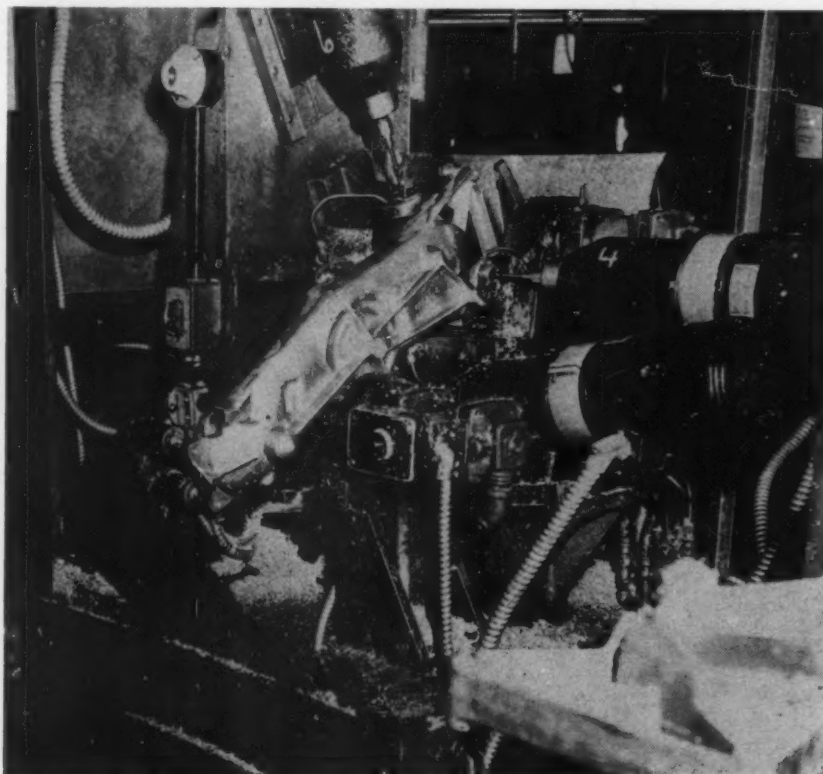


FIG. 3—Drilling of six holes is done by tools in six heads on this special machine. The same holes are tapped in a similar machine.

## Fast Machining

*Continued*

cut at the same time, but it was found that the holes produced were not always truly in line. Addition of the latch device and use of a pilot bushing on the second reamer overcame the difficulty.

Cast aluminum covers that include bearing seats are required to fit the large top openings of the gearcase and they are machined on other lines where excellent tooling is also provided. One

of these castings, called a *dryer cover*, is shown in fig. 6, gripped in a special air-operated chuck on a Lipe Carbo lathe. In this setup, a locating lip is first faced and its diameter is turned. Then the flange is faced and chamfered. All the operator does is to load and unload the piece, close a guard cover and press a starting button. The lathe runs through its cycle automatically while the same operator unloads and reloads a duplicate machine. Total output is 120 pieces per hr, this rate being matched by other machines in the line.

A special five-station machine, equipped with automatic heads drills, taps and spotfaces certain holes, the work being indexed by hand. A

FIG. 4 — Double-end Heald Bore-Matics equipped with a barrel fixture that indexes 180° between operations, bore the part and face certain flanges.

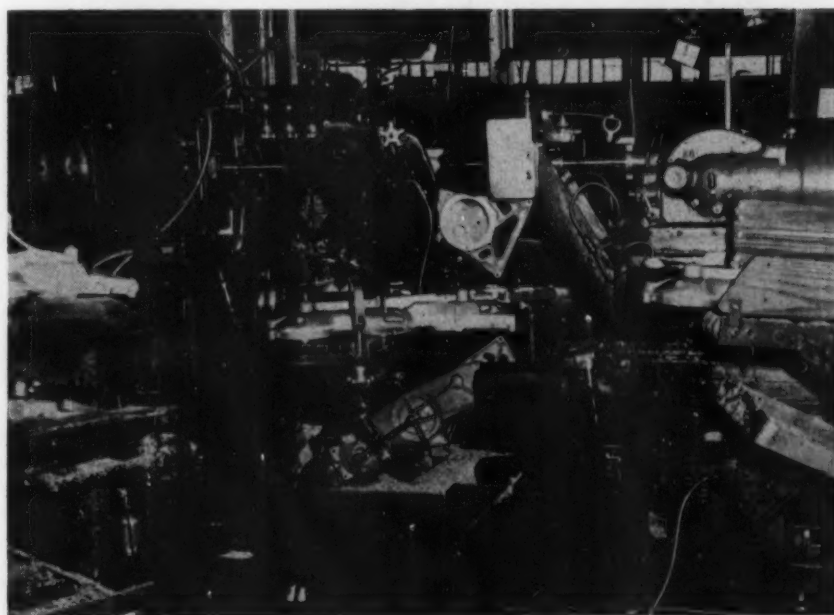


FIG. 5 — A special machine equipped with five No. 30 Kingsbury tool heads drill, spot face and ream the holes for worm bearings in the gearcase.



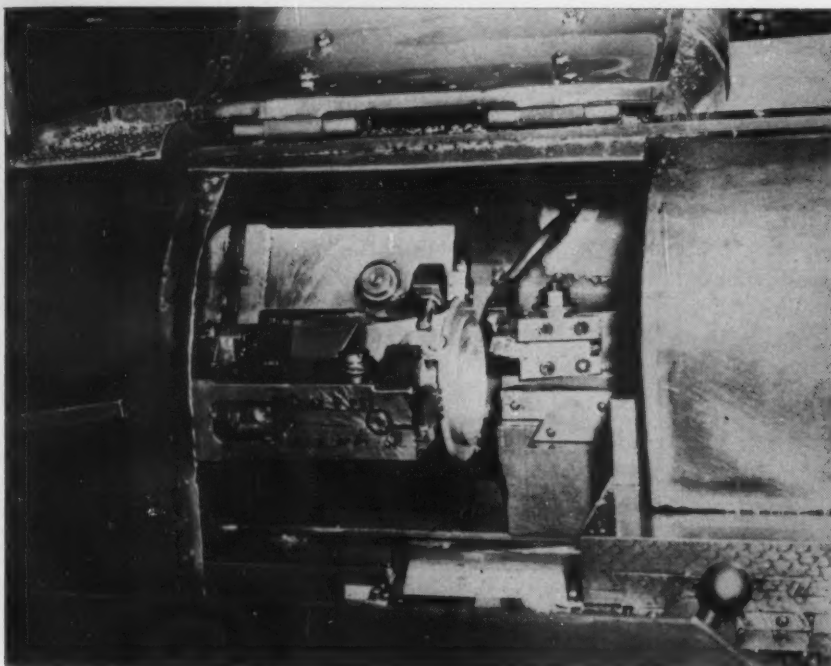


FIG. 6 — Setup in a Lipe Carbo lathe does rapid turning and facing operations on dryer covers held in a special air-operated chuck.

Natco machine with multiple setup then produces flange holes. Castings then are transferred to two 4D Potter & Johnson high speed turret lathes tended by a single operator. These machines each have six-face turrets, but are double-tooled, the tools on only three faces being used per cycle and duplicate tools on the other three faces in the next or alternate cycles. The setup on one of these machines is shown in fig. 7.

In these lathes, the work is held in air-operated chucks, location being from surfaces finished on the Carbo lathe. All operations needed on the outer end of the piece, including rough and finish

boring, facing, forming a radius and tapping and chasing threads, are done automatically in this setup and 53 pieces per hr per machine are completed. Thread chasing is done by a  $1\frac{3}{4}$ -in. Style C Geometric diehead, the thread of 18-pitch, 1 in. long, cut to a shoulder. A class S collapsing tap of the same make taps a  $1\frac{1}{4}$ -in., 18 thread hole.

Operations on these two lathes complete the machining of these castings. Similar operations and equipment do corresponding machining on the cover that fits the opening at the opposite end of the gearcase, but tooling is altered to suit the

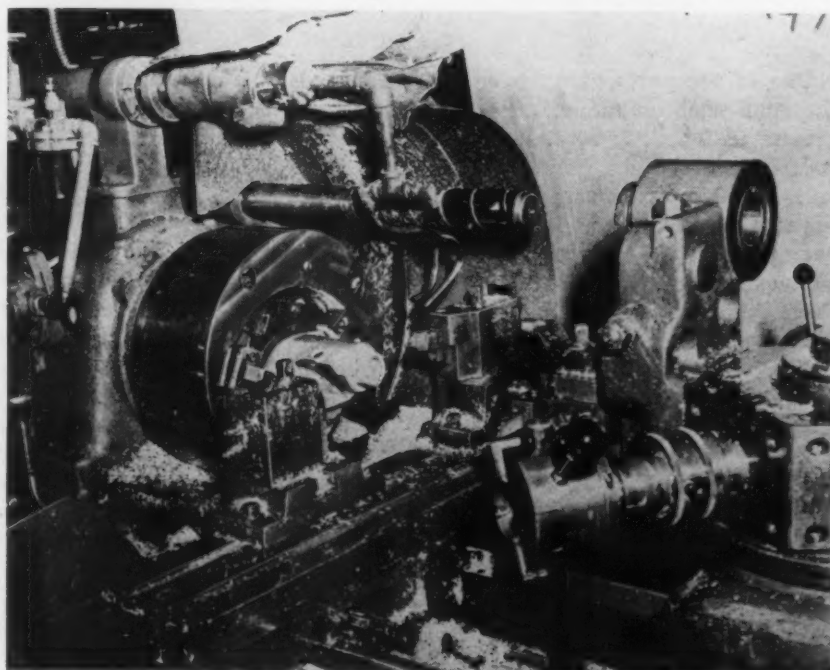


FIG. 7 — Cover castings are machined on Potter & Johnson turret lathes. Double tooling on the six-face chuck is employed.

## Fast Machining

*Continued*

surfaces that require machining. The third cover (center in fig. 1) is a relatively flat casting and is drilled, bored and faced in two Potter & Johnson turret lathes. One operator handles these lathes and has time to do the hole drilling required on this piece, using a Delta drillpress with a multiple-spindle head.

the double-end, four-spindle Excella boring machine, a portion of which is shown in fig. 8. On this machine, the fixtures are on the carriage, the piece being clamped at the large end against the face previously ground and at the small end by a screw set slide that enters the slot between bosses previously milled. Clamping is hydraulic.

The tools for the small end bore the hole within  $\pm 0.0005$ -in. limits and chamfer the end of the hole. At the same time, tools on the other spindle bore the large end to 2.875 in.,  $+0.0005$ ,  $-0.0000$ -in. diam, and face the front side to  $\pm 0.001$  in. on

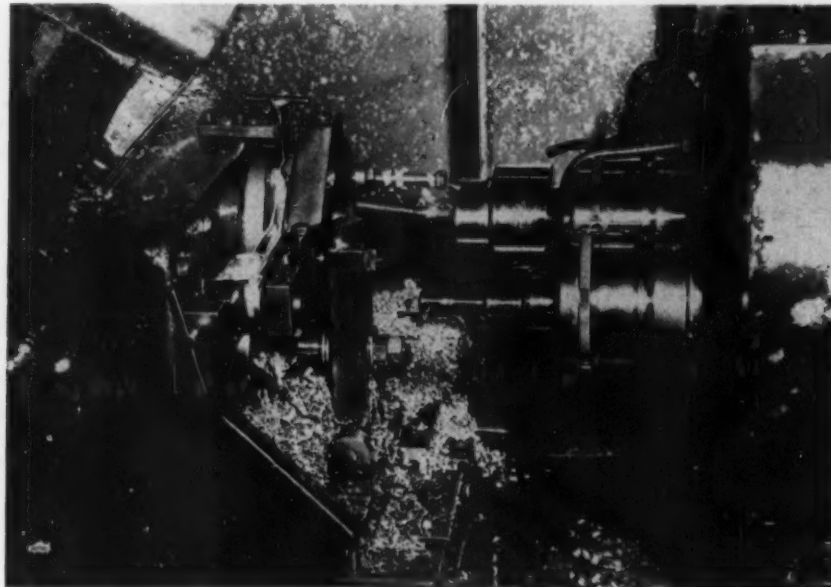


FIG. 8—Connecting rods are bored and their large ends are faced on one side in this setup on an Excella boring machine. Only one of two ends is here shown. The carriage, left, has two separate fixtures.

One of the parts used inside the gearcase is the sand cast aluminum connecting rod, foreground in fig. 1. The first operation on these rods is to grind one side face around the large hole, done simultaneously on ten rods clamped to the rotating table of a Blanchard grinder. This operation is partly to provide a locating face for subsequent operations. A Cincinnati milling machine equipped with an air-clamping fixture then mills the inner faces of the forked end of the rod.

Final operations on the rod are performed in

the thickness of the ring. While these operations proceed, the operator unloads and reloads a rod in the fixture at the other side of the carriage and, by the time cuts are completed, the rod on the opposite side is ready to be advanced into tools on the two spindles at the other end of the machine. The cycle itself is completely automatic. All the operator does is to keep the fixtures load-end and remove castings as they are completed. Thus, 120 pieces per hr are precision bored and faced.

# THREADLESS COUPLING

## *Cuts Blast Furnace*

## *Repair Piping Time*

### **35%**

**SUMMARY:** The author describes how use of Dresser threadless pipe fittings made possible a reduction of 35 to 40 per cent in time required for installing piping on a Newport Steel blast furnace during repairs following a break-out.



**By E. R. NORRIS**

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**A**N interesting step in blast furnace cooling was taken by the Newport Steel Corp. in November, 1948, when it installed Dresser No-Thread fittings in the bosh and hearth piping of its blast furnace at Martins Ferry, Ohio. Departure from the traditional method of using threaded fittings was prompted by the urgent need for returning the furnace to blast, following a break-out.

On June 25, 1948, iron burned through the hearth jacket in the region surrounding the iron notch. Excavation inside the column foundation

disclosed a large area from which both the hearth jacket and the auxiliary staves had disappeared. The extruded iron was lanced off with oxygen. A wall of carbon brick 9 in. thick was laid up to replace the jacket. Hairpin pipes for water cooling were fitted against the carbon brick. Brick and pipes were retained by a mass of concrete composed of crushed fire brick and Lumnite cement, reinforced with steel bars. After preheating the four stoves with fuel oil, the furnace was again put in blast on July 7.

Conditions revealed by the break-out indicated



that the hearth jacket could not last many months. Plans were made for reconstruction of everything below the mantle, including hearth, tuyere breast, and bosh. Sooner than expected, the predicted break-out occurred Nov. 3, under No. 4 tuyere. The steel jacket and cast iron staves for the hearth had been nearly completed but no work had been done on steel for the tuyere breast and bosh bands. This situation compelled retention of the old bosh and tuyere construction and confined rebuilding to the hearth alone.

A small power shovel was employed to excavate part of the cast house to a level approximating the bottom of the furnace foundation. A wagon-mounted pneumatic drill was secured to drill a 4-in. diam hole through the concrete foundation into the bottom of the hearth. By use of an oxygen lance, a hole was opened into molten metal. About 250 tons of the salamander were drained out onto a sand bed in one of the slag pits. The carbon brick patch constructed in July was torn down to facilitate raking out and to permit blasting of the remaining salamander and removal of the hearth brick and remnants of the hearth jacket.

Structural steel cantilevers had been fabricated and welded to the tuyere breast and bolted to brackets on each of the eight columns. These

cantilevers kept the tuyeres concentric with the columns and supported all of the steel up to the mantle. The brick above the tuyeres and below the mantle was supported on the tuyere coolers. All brick below the center line of the tuyeres was removed. This method of support left an unobstructed well from the hearth bottom to the top ring of the furnace. This open well aided greatly in placing the hearth jacket and staves, and in laying bottom blocks and hearth lining.

With the heavy work out of the way and the cantilever supports removed from the tuyere jacket, the cast house again filled to original level and iron runners in place, there still remained the task of installing the water pipe connections from circle pipe legs to hearth staves, to tuyeres and tuyere coolers, and to bosh cooling plates, and discharge connections to the waste trough. This is a notoriously tedious and time-consuming job. Pipe must be cut to exact lengths and threaded with extreme care to insure that the center distances of fittings match the distances between cooler connections. Due to the circular contour of the furnace, short lengths of pipe must be bent accurately or ball joint unions must be employed.

As the furnace had been out of production for nearly a month and the steel works was badly in need of pig iron, any possible reduction in time required for piping was mandatory. While a piping diagram had been rather hastily prepared, no thought had been given to possible changes in methods or materials. Shortly before the break-out, a few No-Thread elbows manufactured by

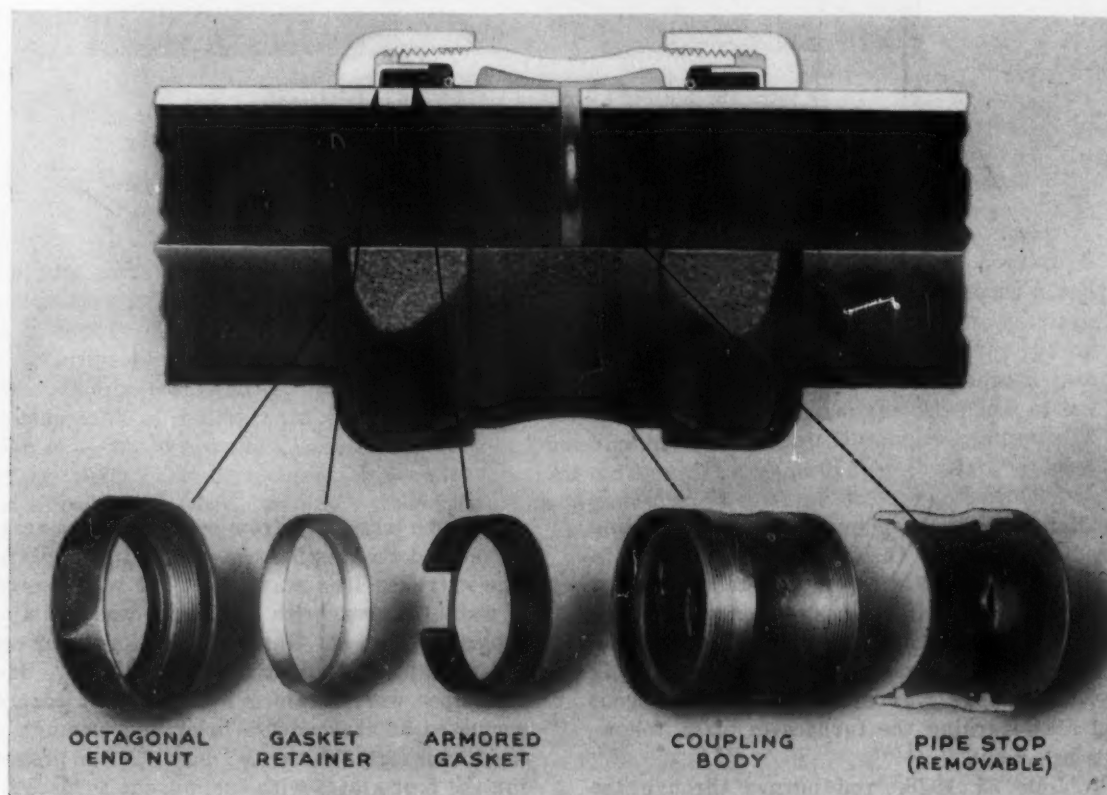


FIG. 1—Cutaway section of a No-Thread coupling used for the furnace piping. The same parts are used in all fittings, with bodies of the required type.

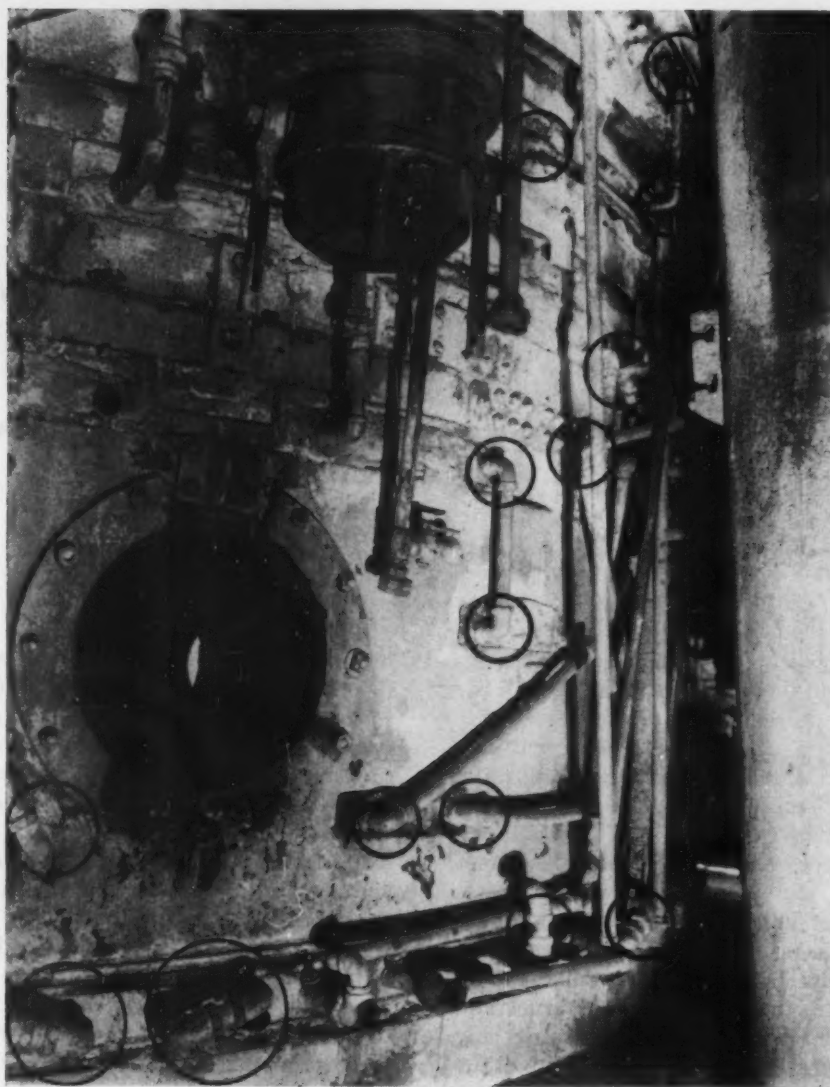


FIG. 2—Photograph taken after furnace shutdown showing location of some of the fittings; about six hundred were used for the complete job.

the Dresser Manufacturing Div., Bradford, Pa., had been purchased for trial. Millwrights and pipe fitters were only slightly aware of their merits but due to their recent limited experience with them, they immediately requested No-Thread elbows for the pipe job. Several shipments of 1¼-in. and 1½-in. 90° elbows were rushed by express from Bradford. The cutaway section of a Style 65, No-Thread coupling shown in fig. 1 illustrates the principle of construction of the elbows.

The mechanics discovered that, when using these fittings, pipe could be cut with 1-in. tolerance in length and that two-thirds of the thread cutting was eliminated since the fittings are used with plain-end pipe. They also found that bends need not be accurate due to the slight angularity permissible with the fittings. Where split cooling plates were used behind columns and where the connections were extremely close, piping which had often required 8 hr was done in 45

min. Overall, the elapsed time for the piping job was reduced to 35 or 40 pct of the time previously necessary for this work.

No-Thread fittings were used on the entire piping job except on a few hearth stove connections immediately over the iron notch where the heat might be too severe for the rubber gaskets employed as a seal in the fittings. Approximately six hundred of the fittings were used. Fig. 2, a photograph taken after the furnace was shut down, shows the location of some of these fittings.

The furnace was blown in on December 7 and remained in blast until June 16, 1949, when it was banked due to less urgent demand for pig iron. On July 13 the furnace was raked out and shut down. The entire cooling system was drained. The cooling pipes in the hearth staves were blown out and filled with kerosene. The ease and quickness with which pipe connections were broken again induced comments by the furnace mechanics on the merits of No-Thread fittings for this type of work.

## ***Mass Production Methods Used for Job Lot Gear Manufacture***

**B**Y designing gears so that a maximum number of gear types can be finished with the minimum number of cutters, and selecting a finishing machine to give minimum cycle time with a minimum time for tool changes, Canadian Acme Screw & Gear Co., Toronto, has obtained the benefits of mass production in the manufacture of many types of gears produced in job-lot quantities.

Ingenious tool and equipment selection and gear design have resulted at Canadian Acme in: (1) Ability to use just two cutters for finishing 25 different gears for several types of truck and farm equipment transmissions; (2) using only 12 quick-interchangeable cutters to finish the gears for three popular light duty truck and three passenger car transmissions, plus the 25 gears mentioned; and (3) finishing each of these gears in a machine cycle of only 20 sec per gear.

The manner in which mass production of job-

lot gears was achieved while improving quality is illustrated by the gears for a tractor transmission. Gears in this transmission consisted of a group of standard gears and a group of special gears, each of which required a separate shaving cutter. By modifying the preshave hobs and shaper cutters to remove 0.020 in. additional metal from the root of the gears, a single modified shaving cutter could be used to shave all of the gears in the transmission.

Standardization, however, extended beyond the gears for this transmission. The same cluster gear and second-speed gear used in one light truck transmission, are also used, with a different drive pinion, for another light truck transmission. Another cluster and second-speed gear, with two different pinions, serves for the transmissions of three different passenger cars, one of which is a fluid drive type.

A third type of standardization is between

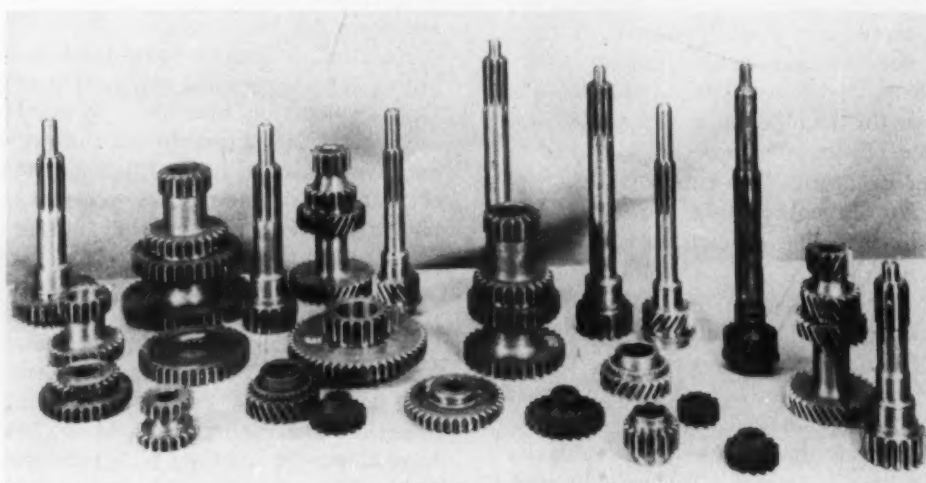


FIG. 1—Of these 39 gears produced by Canadian Acme, 32 can be finish shaved on a single Michigan 870 gear shaver, using only 12 cutters.



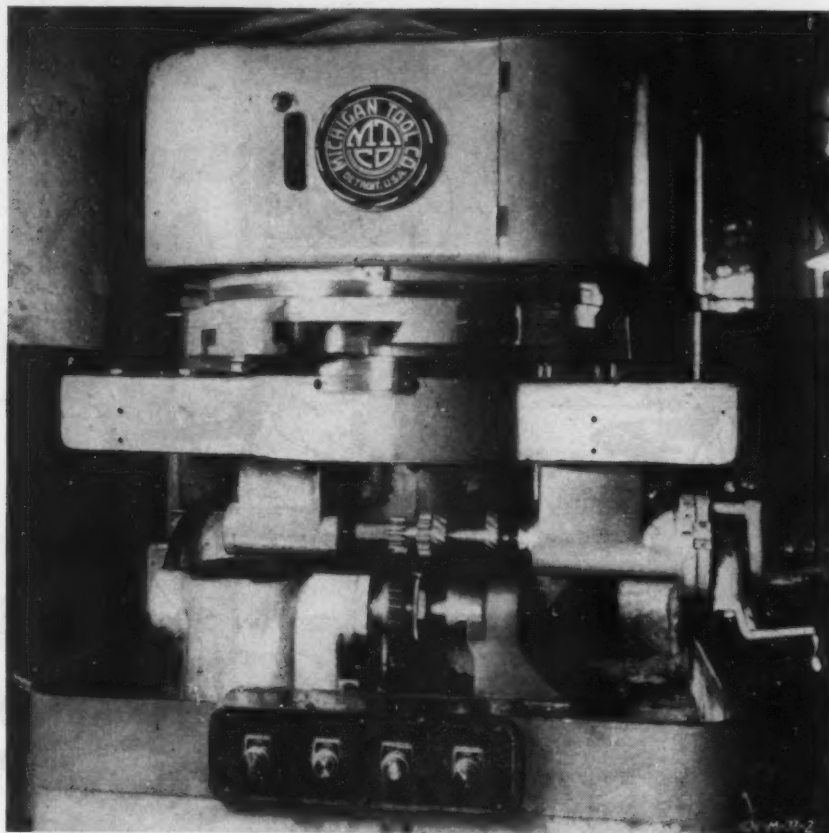


FIG. 2—Newest gear shaver at Canadian Acme is this Michigan model 870, a favorite among the four shavers in the plant because of the ease with which setups can be changed.

gears for different classes of equipment. Thus the pinion and cluster gear for a reaper-thresher transmission are both finished with the same cutter used to finish a cluster gear plus three different pinions for three makes of trucks.

As a result, only 12 different cutters are needed to shave 32 of the 39 gears shown in fig. 1. The other seven gears are not shaved. All gears are SAE 4620 forgings; all spline shafts are 10-spline.

Equipment includes a Michigan rack shaver, used on continuous production of a passenger car idler gear. This machine recently had its first tool sharpening after six years of use, during which time it turned out 300,000 gears at a rate of 50 per hr.

For most gears, however, Canadian Acme uses rotaries because of their lower initial tool cost and somewhat greater production flexibility. Latest of the machines, shown in fig. 2, is a Michigan Tool Co. 870 series three-way machine. Its key position in the production line is the result of three factors: (1) Its ease of setup permits rapid change-over from one gear to another. Switches are made from three to four times a day to take care of the output of different gear cutting lines; (2) longer tool life; and (3) in some cases cycle time is shorter. In no case is cycle time longer.

An average of 110 to 120 gears per hr are turned out on the 870 machine. Stock allowance measured over pins is 0.006 to 0.008 in. on most gears (0.003 to 0.004 in. on tooth thickness). Stock allowance on close shoulder gears is 0.004 to 0.006 in. because of the small crossed axle angle required in shaving these gears.

Since jobs are changed so often and since more than one gear type is shaved with most cutters, tool life is difficult to estimate. On a 17 tooth, 1½ in. face spur gear, Canadian Acme estimates cutter life would be about 5000 gears per grind. Using the same cutter to shave a 43 tooth, ⅝ in. face gear would change this to 15,000 gears per grind.

Gears with the fewest number of teeth are nearly always shaved with the sharpest cutters since these gears are usually more critical as to noise. Spot involute checks of the finished gears indicate when the cutter should be transferred to the shaving of less critical gears.

After each setup, the first gear off the shaver is run with a master gear in a gear speeder. Marking compound on the master locates any contact errors requiring correction of setup. After 2 hr running time, a second check is made and the shaver readjusted, if necessary.



## We're always running into new uses for Stainless Steel

Allegheny Metal is one material that gets around—*plenty!* In fact, stainless steel has something important to do with practically all the food and dairy products you eat—the clothes you wear—the drugs and chemicals you use—the gasoline and oil you buy—the paper you read—the cars, buses, planes and trains you ride in . . . yes, even the electric power that leaps to serve you at the flip of a switch.

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less steel's major fields of use. The gist of the matter is that *no other metal* combines the qualities of great strength, shining beauty and resistance to corrosion, heat and wear to the same degree that stainless steel does.

Somewhere, you can use Allegheny Metal to advantage. In many cases it costs little or no more than lesser metals at the start, and in practically all cases it's far cheaper in the long run. • Let us help you find the way and make it pay.

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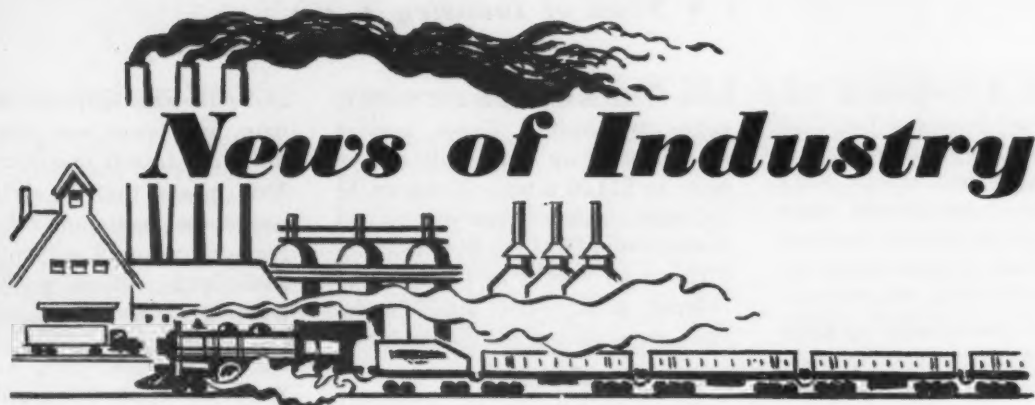
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### Check List for Buying

Price base	Machine straightening
Thickness and width	Restricted tolerances
Pickled	Circle or sketch
Edge	Processing
Cut length	Quality
Percentage of shorts	Specification
Item quantity	Chemical requirements
Order quantity	Packing
Exact quantity	Marking
Restricted camber	Freight

### S. & T. Pays Extra

Youngstown—Directors of Youngstown Sheet & Tube Co. last week declared an extra year-end dividend of \$1 a share payable to common stockholders on Jan. 14. This will bring declarations this year to \$6, including the \$1.25 quarterly disbursements.

The company declared a total of \$5 in 1948, when the quarterly rate was \$1.

### Acme Steel Raises CR Strip

Chicago—Acme Steel Co. posted a price increase of \$3.00 a ton on cold rolled strip here, making the new price \$4.30 per 100 lb effective Dec. 19. A previously reported hot-rolled strip price increase was rescinded.

## Study Shows Strip and Bar Extra Changes

Technological changes reflected in drastic revisions of extras . . . Large bars take average increase of \$3 a ton in extras, smaller sizes up \$8—By D. I. BROWN.

Chicago—Technological progress over the years in the use of steel and methods of manufacturing steels have brought many changes in steel specifications. Steel prices have always been constantly revised to include such changes. Today, steel prices are not simple. They represent the most complex pricing system ever devised on a major basic item.

### Carbon Bar Changes

The Dec. 16 price change by U. S. Steel is drastic. The base price increase was nominal, but the changes in extras were substantial, both ways—up and down. Raises and reductions in extras run as high as \$14.00 a ton on some items, with a few changing as much as \$35.00. Steel prices always lag behind methods of manufacture and specifications and U. S. Steel's action was drastic only because it corrected many old inconsistencies all at once. Progress demands revisions and this recent change by the industry will not be the last. Sheet prices have been revised to the extent that buyers must completely change their thinking as to what types and sizes of steel are the most economical to use. These revisions and reasons for the changes were discussed in THE IRON AGE, Dec. 22, pp. 15 and 87.

Carbon bars are a universally used item. They are the biggest tonnage item produced and a close examination of the new extras versus the old are typical of what was done and why. The base price increase of \$2.00 plus the new extras average out to a general increase of \$10.00 a ton on bars under 2 in. in diam and \$5.00 a ton on larger sizes. Of the present bar price, f.o.b. mill, the base price amounts to approximately 75 pct of the total price—extras make up the rest.

### Quantity Extras Raised

Size extras got a good going over. Rounds, squares and round cornered squares increased \$3.00 to \$5.00 a ton on sizes under 35/64 in. Ovals took a \$15.00 increase in 1/2x1/4 in. size and \$8.00 for 5/8x5/16 in. ovals. Half oval size extras went up \$8.00 while half rounds were increased but \$2.00. Angles have never been a profitable item. In order to meet even commercial straightness tolerances the mills have to machine straighten all such products. The Corporation finally decided to put such items on their feet and size extras on equal and unequal leg angles were increased from \$2.00 to \$10.00 a ton.

The revisions in quantity extras



reflect today's selling practice. The mills don't want Five-and-Ten Cent store orders. They lose money in trying to handle small orders. Such tonnages should be bought from warehouses. From now on they will be, as the extras for less than 3 ton orders are up \$10.00 to \$13.00 a ton.

Special bar quality went up \$2.00 and two new quality extras are published. One is file steel quality. The other, MX quality, is brand new to take care of a new steel just recently developed for high machinability. File quality is now \$18.00 a ton. MX is \$8.00 a ton. The additional restrictive requirement extra, the old SRQ extra under a new name also was raised \$2.00 a ton.

#### Chemistry Extra Up \$1 to \$2

Special bar quality usually demands a killed steel. This means more mill discard and often a hot-top practice. Some steel men believe the quality extras are still not realistic. They point out that carbon bars for cold drawing are often bought in merchant bar quality for which there is no extra. However, billets for such bars must be extensively reconditioned prior to rerolling as the cold drawers will not accept slivers, deep seams and other defects.

In extras for chemistry, carbon in low ranges for both bessemer and openhearth steels went up \$1.00. Manganese extras were increased from \$1.00 to \$2.00. The old base range of 0.40 to 0.60 manganese is not changed. This manganese range requires but small additions of ferromanganese. Ferroalloy prices have all been increased since the last extra revision and U. S. Steel's new manganese extras reflect this cost increase.

#### Many Hot-Rolled Strip Changes

Most other extras, restricted chemistry, tolerance, heat treating, bundling, marking, etc., were left alone. Pickling charges, however, went up \$2.00 to \$5.00 a ton depending on the weight of the bar section.

In hot-rolled carbon strip the changes are legion. Price reduc-

tions in narrow widths and medium gages are acute. Gages heavier than 10 went up in all widths from \$6.00 to \$14.00 a ton. However, in 14 gage, prices were cut in all widths from \$1.00 to \$14.00 a ton. Strip in all widths in 16 gage was reduced plenty—one size,  $\frac{3}{8}$  in. wide, was reduced \$35.00 per ton.

#### Slitting Costs Less

The mills found in their extensive study of extras they were coining money on hot-rolled strip in some ranges of gage and width. Their practice was to roll the ordered width in multiples and slit to meet the customers specifications. This change in rolling practice occurred over a number of years and here again inconsistencies built up over many months were corrected all at once. It is now believed that hot-rolled strip size extras are realistic for the time being.

Consumers will pay much less for slitting on the new price schedule. The old card charged 25¢ to 55¢ depending on gage and width. Today the highest extra for slitting is only 30¢ and the mills will slit widths 2 in. and under for no extra at all. The change in hot mill rolling practice is reflected in slitting

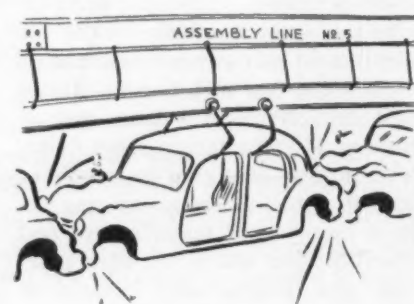
and mill edge extras. To get tonnage and lower cost per ton, the mills try to roll maximum widths. This means that all strip ordered under the maximum rolling width from a given mill is furnished with a slit edge. Some manufacturers don't like, or can't satisfactorily use and process slit edge strip.

#### They Have an Alternative

The new price card gives them an alternative. The mills will round the edges on a separate machine, but the tariff is stiff. For widths 11/16 in. and under this charge runs from \$10.00 to \$140.00 a ton. For widths 15/16 in. to 2 in. they will do it for \$2.00 to \$8.00 a ton. Many consumers of light gage narrow strip were taking advantage of this loophole in the old price card. There were no published prices between the widest flat wire price and the narrowest strip price in light gages. The mills have now plugged this hole and consumers will find that the might as well buy flat wire from a flat wire mill on a wire price card.

Some heat treating extras are up \$5.00 to \$8.00. Extras for closer than standard widths and thicknesses are up \$6.00. Quality extras were increased moderately—\$2.00 to \$5.00 a ton. Most chemical and packaging extras remained as they were. A half page of new extras on specific and restricted test requirements is found in the new card. A very small percentage of the total strip tonnage, however, will be affected by the new extras.

One significant factor regarding strip has reared its head as a result of the recent changes. Cold-rolled strip extras were not changed and probably won't be in the immediate future. Therefore the converters who buy hot-rolled strip and make and sell cold-rolled strip are squeezed. The base price on hot-rolled was not raised but the \$3.00 base differential between hot and cold-rolled strip is not much of a margin in view of the higher extras on hot-rolled.



"Dammit, Kilkare, I said halt the line slowly."

## Joins Iron Age Business Staff

**New York**—Paul L. Bachman has been appointed New England Regional Business Manager of



Paul L. Bachman

THE IRON AGE, succeeding the late Fred Bannister. The appointment is effective immediately.

Mr. Bachman was formerly the New York-Philadelphia representative for Production Engineering and Management. He served with the Ordnance Department of the Army during the war, and was associated with Peake Brothers, Inc., selling all forms of life, fire, casualty and marine insurance prior to the war.

He was a 1932 graduate of the Wharton School of the University of Pennsylvania, and did graduate work at the Harvard Business School.

## Iron Ore Consumption Drops

**Cleveland**—Consumption of Lake Superior district iron ore by U. S. and Canadian blast furnaces rose to 3,520,027 gross tons in November from an estimated 876,792 gross tons in October, peak of the nation-wide steel strike. Bulk of the industry blast furnace capacity was not in production until the middle of November.

Cumulative 1949 consumption totaled 64,072,301 gross tons Dec. 1, compared with 73,153,156 tons for the corresponding period of 1948.

Gross tons of iron ore on hand at furnaces and Lake Erie docks Dec. 1 totaled 44,786,469 gross tons compared with an estimated 47,017,398 gross tons Nov. 1, and 45,160,225 gross tons Dec. 1, 1948.

Furnaces depending principally on Lake Superior district iron ore in blast Dec. 1 numbered 150 in U. S. and eight in Canada. Idle furnaces totaled 35 in U. S. and 2 in Canada.

## INDUSTRIAL SHORTS

**ROLLING AGAIN**—A 32-in. rolling mill, which has been idle since last June, has been put temporarily back into operation at the CARNEGIE-ILLINOIS STEEL CORP.'S Homestead Works. Some of the slabs will be sent to their Irvin Works for finishing while others will be sold outside the company.

**EXPANDS OPERATIONS**—Acquisition of the business and equipment of Van Auken, Inc., with two plants in Michigan and the Helms Industrial Development Co. with plants in Grand Rapids, has been made by PENN-OHIO STEEL CORP., Birdsboro, Pa. Both firms are manufacturers of automobile accessories.

**FORMS COMPANY**—A new firm, ALBORG SUPPLY & EQUIPMENT CO., New York, has been formed to act as manufacturers' representatives specializing in purchasing services in the railroad, oil and marine construction fields. Alvin A. Borgading, former vice-president in charge of purchases for American Car & Foundry Co., will serve as president.

**ADDS TO LINE**—An exclusive license has been secured by ILLINOIS TOOL WORKS, Chicago, from Boots Aircraft Nut Corp., Stamford, Conn., to manufacture and sell their Tri-Lok and Hex-Lok self-locking nuts. Manufacturing facilities for these new products have been set up in their Elgin, Ill., plant.

**\$2 MILLION PLANT**—It has been announced that THOR-CANADIAN CO., LTD., Toronto, producers of home laundry appliances, plans to build a new \$2 million factory on the outskirts of Toronto. Their present plant will be sold.

**GROWING**—A new and completely modernized plant has been announced by the ERIE IRON & SUPPLY CORP., Erie, Pa., scrap dealers. Their warehouse facilities, covering over 25,000 sq ft, is devoted to steel wire.

**GRANTS LICENSE**—A license to use its patented process for the continuous coating of flat-rolled sheet and strip steel in a bath of molten zinc has been granted to the Inland Steel Co., Chicago, by ARMCO STEEL CORP., Middletown, Ohio.

**NEW NAME**—The name of the Pilotless Planes Div. of FAIRCHILD ENGINE & AIRPLANE CORP., Farmingdale, N. Y., has been changed to Fairchild Guided Missiles Div.

**SERVING AGAIN**—Henry T. Luria, Luria Steel & Trading Corp., New York, has been re-elected president of the New York Chapter of the INSTITUTE OF SCRAP IRON & STEEL. Also re-elected were Richard D. Schwartz, secretary and Bertram D. Moskowitz, treasurer.

**DOUBLES CAPACITY**—An addition to its Birmingham plant is being made by VIRGINIA STEEL CO., which will more than double the plant's size. A new office building is in the planning stage.

**NEW STAINLESS**—A new chrome-nickel austenitic stainless steel, named Carpenter Stainless No. 10, has been invented by the CARPENTER STEEL CO., Reading, Pa. The new material is claimed to work-harden much slower than the 18-8 types of stainless, and is therefore well suited to fabrication of fastenings and similar parts by drastic cold heading or upsetting.

**EASTERN MARKET**—Automatic Control Co., St. Paul, has announced the appointment of DEAN M. THOMAS, Buffalo, as their new Western New York representative. He will handle engineering and sales of their automatic liquid controls.

**HEADS GROUP**—John P. Roche, vice-president of Hepenstall Co., Pittsburgh, has been elected as the new president of the MACHINE KNIFE ASSN.



## Car Registrations Expected To Establish an All-Time Record

Detroit—Total passenger car registrations in the U. S. will crowd the 5 million mark for the first time in history according to recent forecasts by R. L. Polk & Co., Detroit, statisticians for the automotive industry.

If November and December registrations continue at a rate above the 400,000 mark, Polk estimated that an all-time car registration record will be established, surpassing 4,587,400 established in 1929.

New truck registrations should end up the year just short of the million mark, Polk officials said. Through Nov. 1, new truck sales amounted to 803,482.

## Auto Pension Drive Expected

Detroit—The recent return of Walter P. Reuther, UAW president, from a 3-week trip to Europe will signalize the renewal of intensified efforts to obtain pensions from the automobile industry, it is predicted here.

It is expected that Chrysler will

be pressed for pensions for more than 85,000 employees shortly after the first of the year.

The UAW-CIO is also spearheading a city-wide pension drive in the City of Toledo. The union drive is being vigorously resisted by prominent industrialists operating plants in the Toledo area. It is charged that the union drive, if successful, may result in a serious loss of industry payrolls.

## Asked to Head Ford Foundation

Detroit—Paul G. Hoffman, Marshall Plan administrator, has turned down an offer to become president of the Ford Foundation, it has been disclosed. Mr. Hoffman explained that it would be impossible for him to leave his job as Marshall Plan administrator now or in the near future.

Reports have been confirmed that Henry Ford II conferred with Mr. Hoffman about becoming president of the Ford Foundation whose assets are now valued at \$200 million.

Mr. Hoffman is on leave in Washington from his present job as president of the Studebaker Corp.

## Clarifies Policy Toward Renegotiation of Contracts

Washington—To make it easier for industry to identify military business subject to renegotiation, the renegotiation policy and review board has adopted the policy that only contracts and subcontracts for which the government pays are subject to renegotiation.

This means that the following types of contracts and subcontracts are exempt: (1) Furnishing equipment or materials for processing end parts which do not become a part of the product for the military, (2) furnishing machinery used for processing other machinery used in turning out the product, and (3) for personal or professional services where the individual comes under government supervision and is paid on a time basis.

Not exempted are contracts or subcontracts for equipment or materials if bought for the government's account.

## GM Offers Wholesale Discount

Detroit—GM is offering an overriding wholesale discount to car and truck dealers on GM parts sold at wholesale.

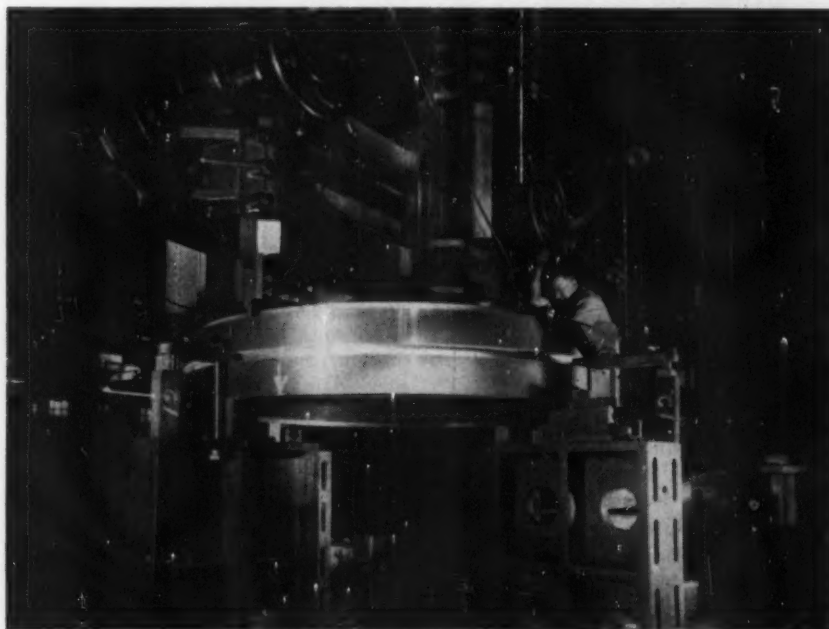
The discount will apply to approximately 310,000 parts handled by GM dealer outlets. GM spokesmen have explained that the move was made to increase the distribution of General Motors factory-engineered parts to independent garages who repair a considerable number of GM vehicles.

## Will Reopen Nash Plant

Los Angeles—Finally caught up by the steel strike, the Nash-Kelvinator plant has been closed here to resume operation Jan. 3. The closing of the Nash assembly plant came later than did the stoppage of assembly operations for eastern units of the company.

From the start of the steel strike, Campbell Woods, plant manager, kept assembly-line employees informed of progress in the

**WILL AID SCIENTIFIC RESEARCH:** Shown is a rotor section of a specially designed axial compressor which is being machined on a 16-ft boring mill at Allis-Chalmers. The compressor will be used at Langley Aeronautical Laboratory, Virginia, for studying problems of flight at speeds faster than sound.





battle of the company to keep parts flowing so as to stay open. When his final letter came advising of the December shutdown, most employees were prepared.

For most of the assembly plants in Southern California, the steel strike repercussions came at the time of model changeovers. General Motors dropped down to a 4-day week and finally closed its plants down for a week. It resumed full production with Buicks rolling along the line while final tooling was completed this week for the new Pontiac and Oldsmobiles.

Chrysler was shut down for model changes.

Ford and its Lincoln-Mercury division remained at full speed throughout the strike, apparently reaching no crisis on the West Coast.

## Bethlehem Steel Price Changes

Bethlehem, Pa.—Bethlehem Steel Co. in announcing their new price schedules said that: "Readjustment of price schedules is being made to cover increased costs and meet new market conditions. The price changes are about the same as those already announced by other steel companies."

The following are f.o.b. mill base prices, effective Dec. 20. The old price with the revision is given and change per net ton. (Prices are in cents per lb unless otherwise noted):

	Old Price	New Price	Increase per ton
Billets, Blooms, Slabs			
Forging quality n. t.	\$61.00	\$63.00	\$2.00
Rerolling quality n. t.	52.00	53.00	1.00
Bars and small shapes...	3.35	3.45	2.00
Hot-rolled alloy bars...	3.75	3.95	4.00
Cold-rolled sheets.....	4.00	4.10	2.00
Hot-rolled sheets.....	3.25	3.35	2.00
Plates.....	3.40	3.50	2.00
Structural shapes.....	3.30	3.45	3.00
Standard steel rails....	3.20	3.40	4.00
Tinplate			down
Cokes, 1.50-lb, base box	\$7.85	\$7.60	-3.25

It is expected that price change announcements on other Bethlehem products will follow shortly.

Increases are still expected on manufacturer's bright wire, and a revised set of extras will probably be issued shortly.



C. R. Cox



C. F. Hood



H. B. Jordan



J. E. Lose

## Cox Heads Kennecott; Hood, Carnegie-Illinois

Pittsburgh—Charles R. Cox has resigned as president of Carnegie-Illinois Steel Corp. to become president of Kennecott Copper Corp., New York, according to an announcement by Ben Fairless, president, U. S. Steel. Mr. Cox will assume his duties as head of the largest copper-producing company in the world on Jan. 1. He succeeds the late E. T. Stannard, who recently died in an airplane accident in Canada.

Mr. Cox has been a leading figure in the steel industry for many years. He is widely known both in this country and abroad as one of the leading operating men in the steel industry. He became president of Carnegie-Illinois, biggest steel-making subsidiary of U. S. Steel, in 1946. Prior to that he was president of National Tube Co.

### Hood Replaces Cox

He began his career with U. S. Steel as an employee of the National Tube Co.'s Ellwood Works, Elwood City, Pa., in 1934, and soon became general superintendent of this plant. In 1936 he was appointed vice-president in charge of operations, and in March, 1941, he was made executive vice-president. Two years later he was elected president of both National Tube and Tubular Alloy Steel Corp.

Clifford F. Hood, president, American Steel and Wire Co., Cleveland, has been elected to succeed Mr. Cox as president of

Carnegie-Illinois Steel Corp. He will assume his new duties on Jan. 1.

Mr. Hood first joined U. S. Steel in 1917, when he became an operating clerk in the Worcester, Mass., plant of American Steel and Wire Co. In 1928 he was made superintendent of South Works, Worcester, and four years later was advanced to assistant manager of the entire Worcester district operations.

On Jan. 1, 1933, he became manager of operations in the Worcester district and in 1935 he was transferred to Cleveland as vice-president in charge of operations. Two years later he was elected executive vice-president, and on Jan. 1, 1938, president of this company.

Harvey B. Jordan, vice-president in charge of operations of American Steel and Wire since 1939, has been elected president. He succeeds Mr. Hood. He will also assume his new duties on Jan. 1, 1950.

Mr. Jordan has been with American Steel and Wire for 35 years, joining the company in 1914 as a chemist.

James E. Lose, vice-president in charge of operations, Carnegie-Illinois Steel Corp., has been elected executive vice-president. He began his business career with the Cox company in 1910. He becomes the first officer to occupy this newly-created post with the company.

## Army Lightens Equipment

Washington—Smaller and lighter communications equipment is now being developed by the army.

New telephone wire developed by the army weighs only 48 lb per mile, compared with World War II wire weighing 132 lb per mile.

All telephone, teletype and radio equipment is being redesigned with a view to "miniaturization," the army said. Communications experts say the trend in designing signal equipment is toward miniaturized, sealed, rugged and more stable component parts of all types of electrical equipment.

## Packard Output Sets 12-Year High

Detroit—On the eve of suspending final assembly operations for 1949, Packard Motor Car Co. disclosed that shipments during the past year reached a total of 105,093 cars, a figure surpassed only by the 1937 all-time Packard record of 109,654.

Nineteen hundred forty-eight

Packard production was 98,646 cars.

Packard reduced its production rate from 92 cars per hr to 46 last Oct. 10.

## M-P Totals Include Machinery

Washington—Another \$195 million in purchase authorizations was approved last week by the ECA, including more than \$66 million in machinery and equipment.

Cumulative authorizations under the Marshall Plan total better than \$7.9 billion. Approximately \$5.5 billion of the amount has been shipped.

Included in recent authorizations were \$1.7 million worth of construction and mining equipment, \$4.4 million in steel mill materials and products, and \$1.8 million worth of blooms, billets, slabs and bars, all for Britain, and \$3.1 million worth of equipment for Italy including \$1.4 million in construction and mining equipment and \$815,000 worth of machine tools.

## Labor Dept. Approves Changes for 75¢ Minimum Wage

Washington—Necessary amendments and revisions, preparatory to putting the amended Fair Labor Standards Act into effect as of Jan. 25, have been approved by the Labor Dept.

These changes, for the most part, have little effect on the iron and steel and other of the metal-working industries where the minimum is generally above the new statutory minimum of 75¢.

Action by the department consists roughly of establishing new definitions of white collar classifications, determining the conditions under which handicapped workers may be paid less than the minimum and providing for the application of the new minimum under the Walsh-Healy Act.

Labor Secretary Tobin said that all government contractors must pay "not less than 75¢" except in the case of learners. This does not affect iron and steel where the minimum is already \$1.08½ under earlier determination.

## Finished Steel Shipments

(As Reported to American Iron and Steel Institute by 99.5 pct of Industry)

Steel Products	Number of Months	OCTOBER - 1949				To Date This Year			
		Not Shipped to the Industry for Construction or for the Navy or for the Atomic Energy Commission (Not Total)	Per cent of Total	Not Shipped to the Industry for Construction or for the Navy or for the Atomic Energy Commission (Not Total)	Per cent of Total	Not Shipped to the Industry for Construction or for the Navy or for the Atomic Energy Commission (Not Total)	Per cent of Total	Not Shipped to the Industry for Construction or for the Navy or for the Atomic Energy Commission (Not Total)	Per cent of Total
Ingot, bloom, slab, billet, tube rounds, sheet and tin bars, etc.	17	17,599	1.9	16,302	1,890,051	3.8	1,769,506		
Slab	6	-	-	-	95,541	0.2	371,649		
Wire rods	21	6,747	0.7	13,667	468,885	1.0	208,403		
Structural shapes (heavy)	11	7,931	0.8	-	3,098,038	6.3	18,696		
Steel piling	4	100	-	-	260,550	0.5	1,357		
Plates	28	51,401	5.5	32,872	4,988,703	10.0	366,525		
Rails—Standard (over 60 lbs.)	7	-	-	-	1,605,955	3.3	6,560		
Rails—All other	8	1,159	0.1	-	108,342	0.2	1,920		
Joint bars	9	129	-	-	34,566	0.2	24,694		
Tie plates	10	2	-	-	85,915	0.7	41		
Track spikes	11	56	-	-	85,915	0.2	35		
Wheels (rolled or forged)	12	5,333	0.6	-	250,038	0.5	596		
Asks	13	2,930	0.3	-	150,179	0.3	29		
Hot rolled bars (including light shapes)	14	88,801	9.5	2,373	5,467,508	11.1	537,503		
Hot rolled bars—Reinforcing	15	30,693	3.3	11	1,307,490	2.7	2,275		
Cold finished bars	16	28,797	3.1	2	1,058,356	2.1	5,693		
Tool steel bars	17	3,393	0.4	-	48,505	0.1	219		
Pipe—Standard	18	19,849	2.1	187	1,759,833	3.6	41,948		
Pipe—Line	19	74,564	8.0	-	2,104,133	4.3	14,763		
Pipe—Oil country goods	20	2,905	0.3	-	1,188,541	2.4	73,470		
Tubes—Boiler	21	-	-	-	96,609	0.2	7,367		
Tubes—Mechanical and pressure	22	20,410	2.2	102	545,868	1.1	13,803		
Miscellaneous pipe (including condenser)	23	3,305	0.4	-	191,242	0.4	1,134		
Wire—Drawn	24	43,510	4.7	384	1,781,684	3.7	28,841		
Wire—Nails and staples	25	8,714	0.9	-	617,621	1.3	6,468		
Wire—Barbed and twisted	26	3,704	0.4	-	189,383	0.4	32		
Wire—Woven wire fences	27	6,101	0.6	-	311,415	0.6	1,904		
Wire—Bale ties	28	321	-	-	38,601	0.1	-		
Black plate	29	7,732	0.8	-	391,576	0.8	254		
Tin and terne plate—Hot dipped	30	35,050	3.7	-	1,448,387	2.9	10		
Tin plate—Electrolytic	31	47,542	5.1	-	1,672,629	3.4	42		
Sheet—Hot rolled	32	71,623	7.7	842	5,231,721	10.6	504,377		
Sheet—Cold rolled	33	157,980	16.9	2	5,782,643	11.6	14,309		
Sheet—Galvanized	34	56,298	6.0	-	1,447,115	2.9	504		
Sheet—Long term	35	6,499	0.7	-	126,990	0.3	305		
Sheet—Mechanical	36	568	0.1	-	136,209	0.3	1,631		
Sheet—Electrical	37	22,295	2.4	-	229,340	0.7	-		
Strip—Hot rolled	38	38,324	4.1	5,431	1,412,161	2.9	280,656		
Strip—Cold rolled	39	63,632	6.8	1,093	1,820,352	3.7	19,332		
All other	40	441	-	-	7,124	-	-		
Total steel products	41	935,037	100.0	75,912	49,214,261	100.0	4,352,098		

During 1948 the companies included above represented 99.5 % of the total output of finished rolled steel products as reported to the American Iron and Steel Institute.

\* Revised.

## Brass, Bronze Ingot Buying Rises

Chicago—Buying of brass and bronze ingots by nonferrous foundries is on the way up, as indicated by the shipment figures released by the Ingot Brass and Bronze Industry. November shipments of 18,488 tons are nearly twice the June low point shipments of 9696 tons.

The second half of the year has seen a gradual rise in tonnage to a point approaching the year end low of 1948. Information from industry members indicates that December shipments may not be quite as heavy as November.

	Short Tons	
	1949	1948
Jan.	19,456	26,998
Feb.	15,026	22,487
Mar.	14,550	24,282
Apr.	10,695	25,177
May	11,114	23,716
June	9,696	24,401
July	10,220	20,456
Aug.	14,194	24,098
Sept.	16,208	23,641
Oct.	18,036	21,559
Nov.	18,488	21,731



# Steel Capacity Raised 2.5 Million Tons

**Nearly half of new melting capacity went for openhearth during past year . . . Melting practices were also greatly improved during this period—By JOHN B. DELANEY.**

**Pittsburgh**—Steel companies in the United States added approximately 2,500,000 tons to their melting capacity, on an annual basis, during 1949, according to a survey by THE IRON AGE.

A check with rolling mill manufacturers also revealed that modernization of rolling facilities to take advantage of the latest technological developments in this field continued at a rapid pace during 1948-49.

Nearly 50 pct of the increase melting capacity for openhearth, with electric furnaces and bessemer converters accounting for the remainder in about equal proportion.

The box score reads like this: Openhearth, 1,103,000 tons; electric furnaces, 693,000 tons, and bessemer converters 666,000 tons. Total: 2,462,000 tons.

## Improved Melting Practices

These figures do not take into account improved melting practices such as the use of oxygen in openhearth and electric furnaces, and the melting of low carbon steels in electric furnaces. In the latter case, a practice becoming increasingly prevalent, high power input has resulted in considerable reduction in heat times. One company reported tapping a 41-ton heat in 1 hr 29 min.

Melting capacity of the industry as of Jan. 1, 1949 was 95,662,170 tons annually. With the 1949 additions, steel companies are now capable of producing approximately 98,125,000 ingot tons a year, barring labor disturbances or interruption of raw materials flow.

## Expect High Ingot Rate

The United Steelworkers of America strike and the spring-summer business slump combined to reduce 1949 output considerably. According to the American Iron & Steel Institute, ingot production in

the first 11 months of the year was 70,080,776 tons, or nearly 10,779,000 tons less than in 1948. High-level production during December was expected to overcome some of this loss.

There seems little doubt that the industry will be able to make good use of its increased melting capacity during the first half of 1950. Benjamin F. Fairless, president of U. S. Steel Corp., subscribes to this belief. No one is willing to predict beyond that time.

Companies which have added to their melting capacity in the last year include (openhearth) American Steel & Wire Co., Weirton Steel Co., Great Lakes Steel Corp., Republic Steel Corp., Granite City Steel Co., Ford Motor Co., and Empire Steel Co.; (electric furnaces) McLouth Steel Corp., Allegheny Ludlum Steel Corp., Rotary Electric Steel Co., Oregon Steel Mills, Southwest Steel Rolling Mills and Lebanon Steel Foundry; (bessemer converters) National Tube Co., and Jones & Laughlin Steel Corp.

A half-million ton increase in iron-making capacity also was reported. Kaiser Steel Co. started up its new blast furnace at Fontana last October, adding 415,000 tons to the industry's capacity, and Tennessee Coal, Iron and Railroad Co., enlarged the diameter of a furnace at Fairfield, Ala., increasing capacity by 53,000 tons.

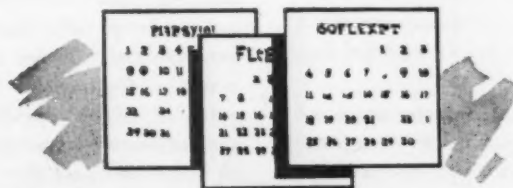
## Raise Iron Capacity, Too

The great rolling mill building program reflected (1) the urgency of replacing outmoded equipment, a task delayed by the war, and (2) the necessity of modernizing in order to remain competitive. Not to mention the fact that with costs increasing in nearly every other direction, installation of the most efficient machinery available becomes an absolute must.

The bulk of these installations were made in the midwest and southwest, followed by the east, south and west, in that order.

## Lincoln Distributes Payments

**Cleveland**—Lincoln Electric Co. distributed \$3,821,973 incentive payments on Dec. 17 to 1097 workers for the year 1949. These payments, as an average, double the income of every member in the organization, according to J. F. Lincoln, president.



## Dates to Remember

- |            |   |
|------------|---|
| Jan. 9-13  | Society of Automotive Engineers, annual meeting, Detroit.                             |
| Jan. 14    | American Electroplaters Society, annual meeting, Chicago.                             |
| Jan. 15-19 | Associated Equipment Distributors, annual meeting, Chicago.                           |
| Jan. 16-18 | Truck-Trailer Manufacturers Assn., annual convention, Edgewater Park, Miss.           |
| Jan. 20    | Malleable Founders' Society, semiannual meeting, Cleveland.                           |
| Jan. 22-24 | Institute of Scrap Iron & Steel, Inc., annual convention, Washington.                 |
| Jan. 23-27 | American Society of Heating & Ventilating Engineers, annual meeting, Dallas.          |
| Feb. 12-16 | American Institute of Mining & Metallurgical Engineers, annual meeting, New York.     |
| Mar. 21-22 | Steel Founders' Society of America, annual meeting, Chicago.                          |
| Apr. 3-4   | Assn. of Iron & Steel Engineers, spring conference, Birmingham.                       |
| Apr. 5-7   | Midwest Power Conference, Chicago.  |
| Apr. 10-14 | American Society of Tool Engineers, industrial cost-cutting exposition, Philadelphia. |



Viewing the News from

The ECONOMIC SIDE

By JOSEPH STAGG LAWRENCE

**"The Psychology of Communism"**

SINCE the end of the war the conflict between communism and capitalism has been as clear as it has been inevitable. Once freed from the notion that communism was simply another form of democracy, we looked to our powder, counted our friends, and examined our defenses.

We have made little headway in understanding the nature of our enemy, particularly the domestic stooge who sneezes whenever Joe has a cold and suffers a headache whenever the boys in the Kremlin indulge in too much wassail.

Our well-meaning liberals who believe themselves the final judges of what makes and constitutes a Communist tell us that he is the product of poverty and oppression. Raise his living standard. Give him three squares a day, four rooms and a bath, vacations with pay, a steady job, security in his old age, and "poof" the Red vanishes. He becomes a sturdy citizen—contented, loyal, industrious, a congenial bourgeois associate.

Never was a character more misunderstood or more egregiously misrepresented. The notion that a full belly and communism cannot meet in the same person has about the same relation to fact as the fable of Jack and his beanstalk.

Actually our most obstreperous Communists are well-fed fellows who have had all the advantages including food, education, and fat bank accounts. This is well illustrated by a recent study in the psychology of radicalism. The subjects of this study were 100 left-wingers, each of whom had a record of membership in more than 20

Communist fronts labelled as subversive. They were taken in the order of numerical membership.

Among this hundred apostles of the Communist brand of liberalism were 6 millionaires, 8 lawyers, 9 actors, 21 writers, and 24 college professors, a total of 68 "fronters," none of whom could have been suffering from lack of food, clothing or shelter.

These men are malcontents not because they lack the material requirements of comfort but because they suffer a sense of frustration. The wealthy Red who has inherited his dough finds that his fellow men do not accord him the respect and prestige which goes to the chap who has accumulated such substance through his own efforts. The movie actor whose mug adorns huge posters, who is lionized by bobby soxers unable to distinguish between celluloid and real heroes, senses that the boys in the street have his number. The college professor who knows all the combinations in the slide rule but makes no more money than a bricklayer feels that his talents are spurned. These men have a common frustration. Under the rules of a free society they lack the influence and miss the rewards to which they feel they are entitled. Ergo they want to change the rules.

The last thing we can expect these fellows to be is reasonable. To give them the benefit of the golden rule is almost a mistake. They want our hides and not equal rights or a fair hearing. Above all, they need a woodshed and the remorseless tattoo of barrel stave on posterior. Once we understand this and act accordingly, we will begin to make some headway in protecting the home front against fifth columns and hothouse traitors.

**More U. S. Steel Stockholders**

New York—U. S. Steel Corp. common stockholders of record on Nov. 4, 1949, numbered 177,333, an increase of 2954 since Aug. 5, 1949. On Aug. 5, 1949, there were 174,379 common stockholders, an increase of 3581 since May 5, 1949.

U. S. Steel Corp. preferred stockholders of record Oct. 31, 1949, totaled 76,147, a decrease of 37 since Aug. 1, 1949. On Aug. 1, 1949, there were 76,184 preferred stockholders, a decrease of 89 since May 2, 1949.

The total number of stockholders as of these dividend record dates is about 238,242 comparing with 235,325 three months before, in both instances allowing for duplication of holders of both classes of stocks. The approximate total increase was 2917 holders.

**Hand Mill Reopens**

Steubenville, Ohio—Superior Sheet Steel Co., at Louisville, Ohio, began operations last week, according to Louis Berkman, president of the Louis Berkman Co. The plant was acquired recently from Borg-Warner Corp.

The plant will produce carbon sheets, flat and corrugated galvanized, and galvanized sheets. Capacity exceeds 10,000 tons per mo.

Irving J. Berkman was appointed general manager of sales, and also named general manager of sales, steel mill products, by the Parkersburg Steel Co., Parkersburg, W. Va., it was announced by Lawrence F. Miller, vice president of Parkersburg.

**Enlarge Port Facilities**

Pittsburgh — The Rust Engineering Co. has completed a \$1,400,000 transit shed construction for three new ships' berths for Alabama State Docks and Terminals, increasing storage facilities at the Port of Mobile by more than 24 pct.

The installation, completed 2 months ahead of schedule, has been constructed on pilings in the Mobile River.

## Ernie Weir Answers Steel Price Critics

**Chairman of National Steel Corp. welcomes opportunity to testify on price increases . . . Scores Senator O'Mahoney . . . Makes seven-point statement.**

**Pittsburgh**—E. T. Weir, chairman of National Steel Corp., is becoming sick and tired of politicians and others who tee off on the steel industry when that industry raises its prices to meet rising costs.

At a press conference here, Mr. Weir said he didn't like it, and asked why it is that little or nothing is said when other industries raise prices, but a great furor results when steel companies boost their selling costs.

Instead of being criticized, the industry should be commended for holding prices down, Mr. Weir said. Even with the recent price advances, steel products are still the cheapest commodity available today, he added (see p. 36).

### Welcomes Investigation

The steel company chairman was particularly indignant at Sen. Joseph C. O'Mahoney, chairman of the Senate-House Economic Committee, who has called for an investigation of recent steel price increases. Mr. Weir implied that the Senator didn't know what he was talking about. He said he would welcome such an investigation, if for no other reason than to better justify the steel industry's position.

Mr. Weir announced price increases averaging \$3.50 per ton, including base and extras, for National Steel Corp. subsidiary products, effective Dec. 20, including a reduction in tin plate prices of slightly less than \$4 per ton. Price revisions generally met the U. S. Steel Corp. prices.

### Seven-Point Statement

Refreshing his memory from notes scribbled on scraps of paper, Mr. Weir said:

(1) The price increases are due to rising costs and no other reason. He added that costs are still going up. National Steel in November shipped 50,000 tons of finished products—15 pct of its capacity—on which it made no profit whatsoever. The boost will mean \$10 million a year to National Steel.

(2) Increased pension and social insurance benefits to employees will cost National

Steel a minimum of \$5 million a year in direct cost, more in indirect costs. This means that National will be spending at least \$8 million a year for this purpose. For companies who had no such plans in effect previously, the cost will be considerably more, proportionately.

(3) Steel profits in 1949 will be less than in 1948, and less in 1950 than in 1949.

(4) Often overlooked are the enormous sums spent by the industry for research, improvement of product and development of raw materials resources. National Steel's stake in the Labrador iron ore development project alone is \$50 million. "This money doesn't grow on trees—it comes out of profits."

(5) The steel industry is not permitted to charge off enough for depreciation, and consequently the money for replacement of plants and equipment must come out of profits, for the most part. Just to replace present plant and equipment of National Steel would require an average expenditure of about \$33 million per year, but the Internal Revenue Bureau allows only about \$12 million per year tax free for such purposes. Additional sums must be spent to expand capacity.

(6) Steel demand fluctuates greatly. In the last 20 years, the industry has operated at an average of 70 pct of capacity, "but we must be prepared to furnish 100 pct. That means an enormous investment for which there is no return." Steel demand will begin to return "normal" the latter part of 1950, "and if it's much over 70 we'll all be greatly surprised."

(7) If critics who accuse the industry of making enormous profits are correct, why is it that steel company stocks are so undesirable to investors. Every steel stock for sale today is priced under its book value.

(8) The steel price increases will cost the public about \$250 million.

## Britain, Canada and U. S. In Agreement on Standardization

**Washington**—Standardization of military arms and equipment among the U. S., United Kingdom, and Canada moved forward last week.

Military officials of the three nations announced "tripartite arrangements" for collaboration in military standardization.

They emphasized that none of the three participating nations had entered into a "treaty, executive agreement, or contractual obligation" but had merely reached an "agreement."

Standardization studies will be carried on by exchange of observers among the three nations. The observers will test materiel of common interest and will aim at the gradual development of common designs and standards in arms, equipment, and training methods.

Military officials expect that at

least three to five years will be needed for development of interchangeable parts and implements.

The Dept. of Defense said the arrangement will insure that in time of necessity there would be no material or technical obstacles to "full cooperation among the armed forces concerned."

## Bethlehem Discloses First Cost Data on Pension Plan

**Bethlehem, Pa.**—The first cost data on the new steel pension plans emerged last week with disclosure by Bethlehem that the total cost of the pension pact it signed Oct. 31 would be between \$7.5 and \$10 million a year for the next 5 years. On top of this there will be an additional expenditure of as much as \$10 million during 1950. To this must be added some \$2 million a year as the company's cost of social insurance.

Bethlehem's 1948 steel shipments amounted to about 10 million tons. Although 1949 shipments will probably be about 15 pct below the 1948 figure, the total cost will be considerably below the \$3 to \$4 a ton which was the preliminary estimate widely made before cost studies were completed.

For Bethlehem the new pension costs will not be as large as for most other companies which did not have plans of this type already in effect. Before the increase, Bethlehem's insurance cost is rated at \$5.5 to \$7.5 million. Thus, the new pension contract will only cost the company about \$2 to \$2.5 extra, over the next 5 years, not counting the additional \$10 million that will be needed in 1950 only.

## Refuses N. Y. Power Proposal

**Washington**—The Federal Power Commission last week turned down an application by the New York Power Authority for permission to develop part of a joint international power project on the St. Lawrence River.



## Construction Steel Awards

Fabricated steel awards this week included the following:

- 8100 Tons, New York, United Nations General Assembly Bldg., American Bridge Co., low bidder.
- 3580 Tons, Chicago, apartment building, 860 Lake Shore Drive, to American Bridge Co., Pittsburgh.
- 2190 Tons, Cook County, Ill., Highway bridge section 42F-11 to American Bridge Co., Pittsburgh.
- 1875 Tons, Chicago, University of Illinois hospital addition to Allied Structural Steel Co., Chicago.
- 1700 Tons, Benedict, Md., Maryland State Roads Commission, to Baltimore Contracting Co., Baltimore.
- 1210 Tons, Boise, Idaho, Lucky Peak Dam construction, Walla Walla District, Corps of Engineers, Ser. CIVENG-45-164-50-20, through Maceo Corp. to Olson Mfg. Co., Boise, Idaho.
- 1100 Tons, Allegheny County, Pa., Pennsylvania Dept. of Highways, Adam Eldemiller, Greensburgh, Pa., low bidder.
- 855 Tons, Chicago, Presbyterian Hospital to American Bridge Co., Pittsburgh.
- 650 Tons, Cook County, Ill., highway bridge section 0404-2HF and 0405-1 to American Bridge Co., Pittsburgh.
- 460 Tons, Bensonville, Ill., diesel service building for Milwaukee Railroad, to Wisconsin Bridge Co., Milwaukee.
- 450 Tons, Delair, N. J., Kleckhefer Container Co., due Dec. 28.
- 335 Tons, Cook County, Ill., state highway bridge section 0304-1-HF to American Bridge Co., Pittsburgh.
- 345 Tons, Des Moines, Ia., Methodist Hospital to Pittsburgh Des Moines Steel Co., Des Moines, Ia.
- 300 Tons, Broadacre, Ohio, plate girder bridges, Pennsylvania Railroad, to Bethlehem Steel Co., Bethlehem.
- 245 Tons, Cook County, Ill., state highway bridge section 0404-1HF to American Bridge Co., Pittsburgh.
- 240 Tons, Spencer County, Ind., highway bridge 3145, bids closed Dec. 20.
- 200 Tons, Dennison, Ohio, Pennsylvania Railroad, Lackawanna Steel Construction Co., Buffalo, low bidder.
- 190 Tons, Arco, Idaho, Nuclear Reactor Testing Station, through Bechtel Corp. to Judson-Pacific Murphy Steel Corp., San Francisco.
- 175 Tons, Waymart, Pa., tubercular building for Fair View State Hospital, Tabon & Barbera, Pittston, Pa., low bidder.
- 175 Tons, Denver, building for Rock Island Railroad to Midwest Steel & Iron Works, Denver.
- 170 Tons, Will County, Ill., state highway bridge section 9F and 9VF to American Bridge Co., Pittsburgh.
- 165 Tons, Denver, Cherry Creek Dam to Midwest Steel & Iron Works, Denver.

Fabricated steel inquiries this week included the following:

- 400 Tons, Chicago, building for Central Wax Paper Co.
- 320 Tons, Larimer County, Colo., highway bridge FE-004-1-6.
- 280 Tons, Newark, N. J., New Jersey Dept. of Highways, due Jan. 12.
- 230 Tons, Converse, Wyo., highway bridge F1-57-5.
- 175 Tons, Juneau, Wis., highway bridge T0500-6.
- 130 Tons, Rock County, Wis., highway bridge S-0626.

Reinforcing bar awards this week included the following:

- 1600 Tons, North Chicago, Ill., Abbott Laboratories, will probably be awarded to J. T. Ryerson & Son, Chicago.
- 700 Tons, Waukegan, Ill., building for Public Services Co. of Northern Illinois, to J. T. Ryerson & Son, Chicago.
- 435 Tons, Chicago, auxiliary outlet sewer No. 2, Paulina St., through Michael Ponterelli, Inc., to J. T. Ryerson & Son, Chicago.
- 225 Tons, Indianapolis, foundation for J. C. Penney store to Hugh J. Baker Co., Indianapolis.
- 210 Tons, Lynch, Ky., building for U. S. Coal & Coke Co., to U. S. Steel Supply Co., Chicago.

- 195 Tons, Columbus, Ind., highway bridge through H. Schutt Co., Indianapolis, to W. J. Holliday & Co., Indianapolis.
- 135 Tons, Evanston, Ill., addition to Evanston High School, Peter Hamlin Co., Chicago, low bidder.
- 125 Tons, Allegheny County, Pa., state highway bridge to U. S. Steel Supply Co., Chicago.
- 125 Tons, Galesburg, Ill., Knox College athletic building to J. T. Ryerson & Son, Chicago.
- 110 Tons, Jay County, Ind., state highway bridge 3135 through Deniston & Garber Co., Rochester, Ind., to Bethlehem Steel Co., Bethlehem.

Reinforcing bar inquiries this week included the following:

- 1100 Tons, Indianapolis, store for J. C. Penney Co.
- 250 Tons, Chicago, warehouse for Admiral Corp. reported last week is being revised.
- 200 Tons, Los Angeles County, Calif., two bridges between Castale Creek and Palomas Wash, California Div. of Highways, Los Angeles, bids to Jan. 19.
- 140 Tons, Milwaukee, building for Marquette University.

## The Federal View

*Continued from Page 38*

flying is making progress, slow perhaps but sure. This has been a good year for civil aviation. Passenger mileage has gone 15 pct ahead of 1948. And despite several serious crashes during the last half, the safety rate is best in history—one fatality per hundred million miles.

But for the light plane, once expected to be the Wonder Child of the postwar era, the trend has been downward. Present production is about 300 a month, not

enough to replace those being scrapped for age and obsolescence.

This trend disturbs the CAA which believes that the light plane is still the solution to many transportation problems for both the farmer and urban businessman. It is bending new efforts toward encouragement of increased use and production of light planes.

It is giving more than lip service. It is generous with aid to local governments for improving local airports. It has granted \$85 million for work to be applied on more than 500 smaller fields.

More than this, however, the CAA is providing financial aid to Texas A. & M. College for development of a small plane, one that would be especially suitable for use in rural areas. When the project is completed, the design and construction data will be turned over to private manufacturers for mass production.

*Resume Your Reading on Page 39*

## On the Assembly Line

*Continued from Page 34*

er guards are larger and contoured to prevent locking and grille damage.

A significant engine improvement is the use of an Oilite filter in the gasoline tank, rather than on the fuel pump. This prevents dirt and water from entering the fuel lines. The Oilite filter is self-cleaning and requires no attention.

## Transmission Units in Demand

New Dodge cars are equipped with Cycle-bond rivetless brake linings.

The demand for the Chrysler semi-automatic transmission has exceeded production by a substantial margin. Dodge dealers have received orders greatly exceeding the available supply. More than 96 pct of Chrysler and DeSotos are being equipped with these self-shifting units.

The new Dodge window regulator raises or lowers the windows with less than two turns of the crank.

*Resume Your Reading on Page 35*



"During this cold spell, Bentley would be down there too, but there's a certain blonde in Detroit."



# MARKET

IRON AGE  
FOUNDED 1855  
MARKETS & PRICES

## Briefs and Bulletins

**dividends**—Iron and steel publicly reported dividends were down slightly for November to \$11.2 millions, and conformed to the general downward movement for all industry dividends of 7 pct less than for November, 1948, according to the Office of Business Economics. Automobile and machinery represented almost the only manufacturing industries showing a good increase in November dividends.

**galvanizing license**—Armco Steel Corp. has licensed Inland Steel Co., Chicago, to use its patented process for continuous coating of flat-rolled sheet and strip in a bath of molten zinc. Patents covering the process, granted to Tadiuz Sendzimir in 1938 and 1940, are controlled by Armco, which built the first continuous coating unit in its Butler, Pa., plant in 1936.

**housing boom**—November housing starts of 93,000 brought the total for 1949 to 937,000, indicating that the year's total would pass the million mark, according to a preliminary report by the Bureau of Labor Statistics. The total so far already matches the previous record set in 1925. November marked the fifth consecutive month in which monthly records were exceeded.

**held up**—New warehouse prices in Chicago were held up last week pending Inland Steel Co.'s announcement on their steel price changes. All warehouses here buy from at least three mills and warehouse executives preferred to have a look at all the mill price cards in the area before making their adjustments.

**gear index off**—The American Gear Manufacturers Assn. index shows volume for the gearing industry to be off 4.8 pct in November, compared with October. The index figure for November is computed to be 230.7 (1935-39 = 100).

**strip cut**—Sharon Steel Corp. has cut the price of hot-rolled strip 6-in. and under by \$5.00 a ton, bringing it back to \$3.25 per 100 lb. Its other price changes were effective Dec. 20, meeting those of most other mills.

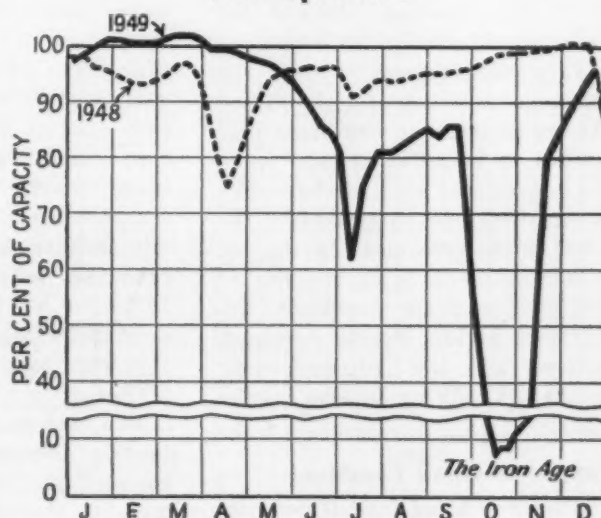
**repercussions**—The political repercussions of the price boost were no surprise: Price increases are never popular. When steel leaders take the stand in Washington they are expected to stress these points: (1) High post-war steelmaking operations were abnormal; (2) profits would almost surely be lower next year even at 1949 labor costs—but 1950 labor costs will be quite a lot higher; and finally, (3) higher prices and costs for freight, iron ore, coal and alloying materials have raised raw material costs, offsetting savings from lower steel scrap prices.

**tool steel up**—Latrobe Electric Steel Co. announces a 10 pct increase in base prices and extras on high speed steel, tool and die steels and carbon tool steels, effective Dec. 23.

**chicago price**—Wisconsin Steel Co.'s price increase went into effect Dec. 27. On the average for the products they make the increase amounts to \$6.46 per net ton.

**c-f bar price**—American Steel & Wire Co., on Dec. 22 announced a price of \$4.15 per 100 lb on cold-finished carbon bars. This is a price increase of \$3 a ton.

Steel Operations



District Operating Rates—Per Cent of Capacity

Week of	Pittsburgh	Chicago	Youngstown	Philadelphia	Cleveland	Buffalo	Wheeling	South	Detroit	West	Ohio River	St. Louis	East	Aggregate
December 18...	97.0	96.5	85.0	85.0	103.0	103.5	96.5	103.0	101.0	94.5**	89.0	89.5	96.0	94.5
December 25...	94.5	90.0	75.0	75.0	100.0	92.5	101.0	101.0	91.0	79.5	80.0	81.0	89.5	85.5**

\* Revised.

\*\* Tentative.

December 29, 1949

# Nonferrous METALS OUTLOOK

## Market Activities

**Brass products buying tapers off some for year inventory taking . . . Copper buying continues heavy . . . Stockpiling builds lead market . . . Tin price stable at 78¢.**



by

*John Anthony*

**New York**—The recent heavy buying of brass mill products has tapered off some according to reports prevalent in the industry. Tube demand, one of the fastest moving products of the industry, has eased off with the end of the construction season and the approaching year end. Yet copper producers are still besieged for deliveries of billets for tubes.

This development cannot be taken as indicative of a significant change in trend in the brass mill market, to be reflected later on in the copper and zinc markets. For a long time the customers of the brass mills have been buying for immediate need. With the end of the year and the inventory adjustment period, buying has been reduced and the industry order backlog is nothing to take up the slack.

### Copper Demand Continues

Copper demand is still very active. This is one metal market in which year end inventory curtailment has not been a factor. Demand is currently well in excess of refined copper production, with existing mine and smelting capacity operating at reduced rates.

There has been a heavy demand for copper scrap to supplement

mine output. The latest monthly figures of the industry indicate that some 13,000 tons of scrap went into refined copper production. Scrap dealers report that copper and brass scrap which had been flooding in to the refineries a month ago is no longer coming out. Refineries have not paid more than the current prices based on 15¼¢ for No. 1 heavy copper. But it is understood in the trade that if a good tonnage were offered, a higher price might be obtained.

The lead market is fairly active largely because of the general knowledge of the government buying for stockpile. The smelting charge for battery plates has been reduced to a range of \$50 to \$55, indicating the tightening up of the market.

RFC reduced the price of tin on Dec. 22 to 78.00¢, a price which is expected to hold in the market for a little time. It seems that the British Ministry of Supply is sold

out of the tin shipped on consignment more than a month ago. It was the availability of this tin which has been partly responsible for the continued reductions in the domestic market. Offerings were being made a fraction of a cent below the RFC tin price, which served to unsettle the market.

### Magnesium Output Up

The Magnesium Assn. estimates that production of primary magnesium ingot will reach 23 million lb in 1949, 3 million lb above production last year. It is estimated that secondary magnesium recovery will reach 8 million lb, the same recovery as in 1948.

Some of the new uses for magnesium have continued to develop in 1949. These include the use of magnesium products in photoengraving and other graphic arts applications and the use of sheet and extrusions in truck bodies.

## NONFERROUS METALS PRICES

	Dec. 21	Dec. 22	Dec. 23	Dec. 24	Dec. 27
Copper, electro, Conn. ....	18.50	18.50	18.50	18.50	18.50
Copper, Lake, Conn. ....	18.025	18.025	18.025	18.025	18.025
Tin, Straits, New York ....	78.00	78.00	78.00	78.00	78.00
Zinc, East St. Louis ....	9.75	9.75	9.75	9.75	9.75
Lead, St. Louis ....	11.80	11.80	11.80	11.80	11.80

Note: Quotations are going prices.

## Mill Products

### Aluminum

(Base prices, cents per pound, base 30,000 lb. f.o.b. shipping point, freight allowed)

Flat Sheet: 0.188 in., 2S, 3S, 26.9¢; 4S, 61S-O, 28.8¢; 52S, 30.9¢; 24S-O, 24S-OAL, 29.8¢; 75S-O, 75S-OAL, 36.8¢; 0.081 in., 2S, 3S, 27.9¢; 4S, 61S-O, 30.2¢; 52S, 32.3¢; 24S-O, 24S-OAL, 30.9¢; 75S-O, 75S-OAL, 38¢; 0.032 in., 2S, 3S, 29.5¢; 4S, 61S-O, 33.5¢; 52S, 36.2¢; 24S-O, 24S-OAL, 37.9¢; 75S-O, 75S-OAL, 47.6¢.

Plate: ¼ in. and heavier: 2S, 3S, F, 23.8¢; 4S-F, 26¢; 52S-F, 27.1¢; 61S-O, 26.6¢; 24S-F, 24S-FAL, 27.1¢; 75S-F, 75S-FAL, 35.9¢.

Extruded Solid Shapes: Shape factors 1 to 4, 38.6¢ to 44¢; 11 to 13, 34.6¢ to 76¢; 25 to 25, 38.7¢ to 41.05¢; 35 to 37, 44¢ to 41.53¢; 47 to 49, 63.5¢ to 72.20¢.

Red, Rolled: 1.5 to 4.5 in., 2S-F, 3S-F, 34¢ to 30.5¢; Cold-finished, 0.375 to 3 in., 2S, 3S, 36.5¢ to 32¢.

Screw Machine Stock: Drawn, ¼ to 11/32 in., 11S-T3, R317-T4, 49¢ to 38¢; cold-finished, ¼ to 1½ in., 11S-T3, 37.5¢ to 35.5¢; ¾ to 2 in., R317-T4, 37.5¢ to 34.5¢; rolled, 1 9/16 to 3 in., 11S-T3, 35.5¢ to 32.5¢; 2½ to 3½ in., R317-T4, 33.5¢ to 32.5¢. Base 5000 lb.

Drawn Wire: Coiled, 0.051 to 0.374 in.: 2S, 36¢ to 26.5¢; 52S, 44¢ to 32¢; 56S, 47¢ to 38.5¢; 17S-T4, 50¢ to 34.5¢; 61S-T4, 44.5¢ to 34¢; 75S-T4, 76¢ to 55¢.

### Magnesium

(Cents per lb. f.o.b. mill, freight allowed  
Base quantity 30,000 lb)

Sheets and Plate: M, FSA, ¼ in., 54¢-56¢; 0.188 in., 56¢-58¢; B & S gage 8, 58¢-60¢; 10, 59¢-61¢; 12, 63¢-65¢; 14, 69¢-74¢; 16, 76¢-81¢; 18, 84¢-89¢; 20, 96¢-1.01; 22, 1.12-1.31; 24, 1.62-1.75. Specification grade higher.

Extruded Round Rod: M, diam in., ¼ to 0.311, 58¢; ¾ to 1, 46¢; 1½ to 1.749, 43¢ to 5, 41¢. Other alloys higher.

Extruded Square, Hex. Bar: M, size across flats, in., ¼ to 0.311, 61¢; ½ to 0.749, 48¢; 1½ to 1.749, 44¢; 2½ to 4, 42¢. Other alloys higher.

Extruded Solid Shapes, Rectangle: M, in weight per ft. for perimeters of less than size indicated, 0.10 to 0.11 lb per ft. per. up to 3.5 in., 55¢; 0.22 to 0.25 lb per ft. per. up to 5.9 in., 51¢; 0.50 to 0.59 lb per ft. per. up to 8.6 in., 47¢; 1.8 to 2.59 lb per ft. per. up to 19.5 in., 44¢; 4 to 6 lb per ft. per. up to 23 in., 44¢. Other alloys higher.

Extruded Round Tubing: M, wall thickness, outside diam, in., 0.049 to 0.067, ¼ to 5/16, 11.14; 5/16 to ¾, 11.02; ¾ to 1, 7.6¢; 1 to 2 in., 6.5¢; 0.065 to 0.082, ¾ to 7/16, 8.5¢; ¾ to 1, 6.2¢; 1 to 2 in., 5.7¢; 0.165 to 0.219, ¾ to 1, 5.4¢; 1 to 2 in., 5.8¢; 3 to 4 in., 4.9¢. Other alloys higher.

### Nickel and Monel

(Base prices, cents per lb. f.o.b. mill)

	Nickel	Monel
Sheets, cold-rolled	60	47
Strip, cold-rolled	66	50
Rods and bars	56	45
Angles, hot-rolled	56	45
Plates	58	46
Seamless tubes	59	50
Shot and blocks	89	40

### Copper, Brass, Bronze

(Cents per lb. freight prepaid on 200 lb)

	Sheets	Rods	Extruded Shapes
Copper	32.18		31.78
Copper, h-r		28.03	
Copper, drawn		29.28	
Low brass	30.12	29.81	33.03*
Yellow brass	28.69	28.38	31.70*
Red brass	30.60	30.29	33.51*
Naval brass	33.51	27.57	28.82
Leaded brass		23.19	27.22
Com'l bronze	31.61	31.30	34.27*
Manganese bronze			
Phosphor bronze	37.01	30.92	32.42
Muntz metal	50.90	51.15	
Everdur, Hercules, Olym-	31.58	27.14	28.39
pic, etc.			
Nickel silver, 10 pct	37.19	36.14	
Arch. bronze	39.66	41.87	46.80
*Seamless tubing.			27.22

## Primary Metals

(Cents per lb. unless otherwise noted)

Aluminum, 99+%, 10,000 lb, freight allowed	17.00
Aluminum pig	16.00
Antimony, American, Laredo, Tex.	32.00
Beryllium copper, 3.75-4.25% Be, dollars per lb contained Be	\$24.50
Beryllium aluminum 5% Be, dollars per lb contained Be	\$52.00
Bismuth, ton lots	\$2.00
Cadmium, del'd	\$2.00
Cobalt, 97-99% (per lb)	\$1.80 to \$1.87
Copper, electro, Conn. Valley	18.50
Copper, lake, Conn. Valley	18.625
Gold, U. S. Treas., dollars per oz.	\$35.00
Indium, 99.8%, dollars per troy oz.	\$2.25
Iridium, dollars per troy oz.	\$100 to \$110
Lead, St. Louis	11.80
Lead, New York	12.00
Magnesium, 99.8+%, f.o.b. Freeport, Tex.	20.50
Magnesium, sticks, car lots	34.50
Mercury, dollars per 76-lb flask f.o.b. New York	\$70 to \$73
Nickel, electro, f.o.b. New York	42.97
Palladium, dollars per troy oz.	\$24.00
Platinum, dollars per troy oz.	\$69 to \$72
Silver, New York, cents per oz.	73.25
Tin, New York	78.00
Zinc, East St. Louis	9.75
Zinc, New York	10.47
Zirconium copper, 10-12 pct Zr, per lb contained Zr	\$12.00

## Remelted Metals

### Brass Ingot

(Cents per lb delivered, carloads)

85-5-5-5 ingot	
No. 115	16.75-18.25
No. 120	16.25-17.75
No. 123	15.75-17.25
80-10-10 ingot	
No. 305	21.75
No. 315	19.75
88-10-2 ingot	
No. 210	27.75
No. 215	25.25
No. 245	18.25-21.00
Yellow ingot	
No. 405	14.25-16.00
Manganese bronze	
No. 421	20.75

### Aluminum Ingot

(Cents per lb, lot of 30,000 lb)

95-5 aluminum-silicon alloys	
0.30 copper, max.	18.50-19.00
0.60 copper, max.	18.25-18.75
Piston alloys (No. 122 type)	16.50-17.00
No. 12 alum. (No. 2 grade)	16.25-16.75
108 alloy	16.75-17.25
195 alloy	17.50-18.00
13 alloy	18.50-19.00
AXS-679	16.75-17.25
5% Ti, Aluminum, f.o.b., Eddystone, Pa.	31.00
Low copper	28.00
2% copper	

### Steel deoxidizing aluminum, notch-bar granulated or shot

Grade 1—95-97½%	17.75-18.50
Grade 2—92-95%	16.75-17.50
Grade 3—90-92%	15.75-16.50
Grade 4—85-90%	15.25-15.75

## Electroplating Supplies

### Anodes

(Cents per lb. freight allowed, in 500 lb lots)

Copper	
Cast, oval, 15 in. or longer	35½
Electrodeposited	29½
Rolled, oval, straight, delivered	33
Ball anodes	33½
Brass, 80-20	
Cast, oval, 15 in. or longer	31½
Zinc, oval, 99.886, f.o.b. Detroit	17½
Ball anodes	16½
Nickel 99 pct plus	
Cast	59.00
Rolled, depolarized	60.00
Cadmium	\$2.15
Silver 999 fine, rolled, 100 oz lots, per troy oz, f.o.b. Bridgeport, Conn.	79

### Chemicals

(Cents per lb. f.o.b. shipping point)

Copper cyanide, 100 lb drum	46½
Copper sulfate, 99.5 crystals, bbl.	11.10
Nickel salts, single or double, 4-100 lb bags, frt allowed	18.00
Nickel chloride, 300 lb bbl.	24.50
Silver cyanide, 100 oz lots, per oz.	59
Sodium cyanide, 96 pct domestic 200 lb drums	19.25
Zinc sulfate, 89 pct granular	11.00
Zinc cyanide, 100 lb drums	38.00

## Scrap Metals

### Brass Mill Scrap

(Cents per pound; add ¼¢ per lb for shipments of 20,000 to 40,000 lb; add 1¢ for more than 40,000 lb)

	Heavy	Turnings
Copper	15½	14½
Yellow brass	12½	11½
Red brass	14	13½
Commercial bronze	14½	13½
Manganese bronze	12	11½
Leaded brass rod ends	12½	

### Custom Smelters' Scrap

(Cents per pound, carload lots, delivered to refinery)

No. 1 copper wire	15.25
No. 2 copper wire	14.25
Light copper	13.25
Refinery brass	13.00*
Radiators	9.50
*Dry copper content.	

### Ingot Makers' Scrap

(Cents per pound, carload lots, delivered to producer)

No. 1 copper wire	15.25
No. 2 copper wire	14.25
Light copper	13.25
No. 1 composition	12.50
No. 1 comp. turnings	12.00
Rolled brass	10.50
Brass pipe	10.50
Radiators	9.25- 9.50
Heavy yellow brass	9.50

### Aluminum

Mixed old cast	10.00-10.50
Mixed old clips	10.00-10.50
Mixed turnings, dry	8.50- 9.00
Pots and pans	10.00-10.50
Low copper	11.50-12.00

### Dealers' Scrap

(Dealers' buying prices, f.o.b. New York in cents per pound)

### Copper and Brass

No. 1 heavy copper and wire	13½-13½
No. 2 heavy copper and wire	12½-12½
Light copper	11½-11½
Auto radiators (unsweated)	8 - 8½
No. 1 composition	10½-10½
No. 1 composition turnings	10 - 10½
Clean red car boxes	8½ - 9
Cocks and faucets	8½ - 9
Mixed heavy yellow brass	6½ - 7
Old rolled brass	8 - 8½
Brass pipe	8½ - 9
New soft brass clippings	10½-11
Brass rod ends	9½-10
No. 1 brass rod turnings	9½- 9½

### Aluminum

Alum. pistons and struts	4½ - 5
Aluminum crankcases	7½ - 8
2S aluminum clippings	10½-11
Old sheet and utensils	7½ - 8
Borings and turnings	7½ - 8
Misc. cast aluminum	7½ - 8
Dural clips (24S)	7½ - 8

### Zinc

New zinc clippings	6 - 6½
Old zinc	4 - 4½
Zinc routings	2½ - 3
Old die cast scrap	3½ - 3½

### Nickel and Monel

Pure nickel clippings	21 -23
Clean nickel turnings	14 -15
Nickel anodes	20 -22
Nickel rod ends	20 -22
New Monel clippings	12 -14
Clean Monel turnings	8 - 9
Old sheet Monel	10 -12
Old Monel castings	9 -10
Inconel clippings	11 -13
Nickel silver clippings, mixed	8 -10
Nickel silver turnings, mixed	6 - 7

### Lead

Soft scrap, lead	9½ - 9½
Battery plates (dry)	4½ - 4½

### Magnesium

Segregated solids	9 -10
Castings	5½ - 6½

### Miscellaneous

Block tin	60 -62
No. 1 pewter	38 -40
No. 1 auto babbitt	35 -37
Mixed common babbitt	9 - 9½
Solder joints	11½-12
Siphon tops	40 -42
Small foundry type	11½-12
Monotype	10½-11
Lino. and stereotype	9½-10½
Electrotype	8½ - 8½
New type shell cuttings	11½-11½
Hand picked type shells	4 - 4½
Lino. and stereo. dross	4½ - 5
Electro. dross	2½ - 3



# FERROALLOYS

## Ferromanganese

78-82% Mn, maximum contact base price, gross ton, lump size.	
F.o.b. Birmingham	\$174
F.o.b. Niagara Falls, Alloy, W. Va., Welland, Ont.	\$172
F.o.b. Johnstown, Pa.	\$174
F.o.b. Sheridan, Pa.	\$172
F.o.b. Etna, Clairton, Pa.	\$175
\$2.00 for each 1% above 82% Mn, penalty, \$2.15 for each 1% below 78%.	
Briquets—Cents per pound of briquet, delivered, 66% contained Mn.	
Carload, bulk	10.45
Ton lots	12.05
Less ton lots	12.95

## Spiegeleisen

Contract prices gross ton, lump, f.o.b.	
16-19% Mn	19-21% Mn
3% max. Si	3% max. Si
Palmerston, Pa.	\$64.00
Pgh. or Chicago	\$65.00
	\$66.00

## Manganese Metal

Contract basis, 2 in. x down, cents per pound of metal, delivered.	
96% min. Mn, 0.2% max. C, 1% max. Si, 2% max. Fe.	
Carload, packed	35.5
Ton lots	37.0

## Electrolytic Manganese

F.o.b. Knoxville, Tenn., freight allowed east of Mississippi, cents per pound.	
Carloads	28
Ton lots	30
Less ton lots	32

## Low-Carbon Ferromanganese

Contract price, cents per pound Mn contained, lump size, delivered.	
Carloads Ton Less	
0.07% max. C, 0.06% P, 90% Mn	25.25 27.10 28.30
0.10% max. C	24.75 26.60 27.80
0.15% max. C	24.25 26.10 27.30
0.30% max. C	23.75 25.60 26.80
0.50% max. C	23.25 25.10 26.30
0.75% max. C	
7.00% max. Si	20.25 22.10 23.30

## Silicomanganese

Contract basis, lump size, cents per pound of metal, delivered, 65-68% Mn, 18-20% Si, 1.5% max. C. For 2% max. C, deduct 0.2¢.	
Carload bulk	8.95
Ton lots	10.60
Briquet, contract basis carlots, bulk delivered, per lb of briquet	10.30
Ton lots	11.90
Less ton lots	12.80

## Silvery Iron (electric furnace)

Si 14.01 to 14.50 pct, f.o.b. Keokuk, Iowa, or Wenatchee, Wash., \$77.00 gross ton, freight allowed to normal trade area; Si 15.01 to 15.50 pct, f.o.b. Niagara Falls, N. Y., \$73.50. Add \$1.00 per ton for each additional 0.50% Si up to and including 18%. Add \$1.00 for each 0.50% Mn over 1%.

## Silicon Metal

Contract price, cents per pound contained Si, lump size, delivered, for ton lots packed.	
96% Si, 2% Fe	20.70
97% Si, 1% Fe	21.10

## Silicon Briquets

Contract price, cents per pound of briquet, bulk, delivered, 40% Si, 1 lb Si briquets.	
Carload, bulk	6.30
Ton lots	7.90
Less ton lots	8.80

## Electric Ferrosilicon

Contract price, cents per pound contained Si, lump size, bulk, in carloads, delivered.	
25% Si	17.00
50% Si	11.30
75% Si	13.50
85% Si	14.65
90-95% Si	16.50

## Calcium Metal

Eastern zone contract prices, cents per pound of metal, delivered.	
Cast Turnings Distilled	
Ton lots	\$2.05 \$2.95 \$3.75
Less ton lots	2.40 3.30 4.55

## Ferrochrome

Contract prices, cents per pound, contained Cr, lump size, bulk, in carloads, delivered.	
(65-72% Cr, 2% max. Si)	
0.06% C	28.75
0.10% C	28.25
0.15% C	28.00
0.20% C	27.75
0.50% C	27.50
1.00% C	27.25
2.00% C	27.00
65-69% Cr, 4-9% C	20.50
62-66% Cr, 4-6% C, 6-9% Si	21.35
Briquets—Contract price, cents per pound of briquet, delivered, 60% chromium.	
Carload bulk	13.75
Ton lots	15.25
Less ton lots	16.15

## High-Nitrogen Ferrochrome

Low-carbon type: 67-72% Cr, 0.75% N. Add 5¢ per lb to regular low carbon ferrochrome price schedule. Add 5¢ for each additional 0.25% N.

## S. M. Ferrochrome

Contract price, cents per pound chromium contained, lump size, delivered.	
High carbon type: 60-65% Cr, 4-6% Si, 4-6% Mn, 4-6% C.	
Carloads	21.60
Ton lots	23.75
Less ton lots	25.25
Low carbon type: 62-66% Cr, 4-6% Si, 4-6% Mn, 1.25% max. C.	
Carloads	27.75
Ton lots	30.05
Less ton lots	31.85

## Chromium Metal

Contract prices, per lb chromium contained packed, delivered, ton lots. 97% min. Cr, 1% max. Fe.	
0.20% max. C	\$1.09
0.50% max. C	1.05
9.00% min. C	1.04

## Calcium-Silicon

Contract price per lb of alloy, lump, delivered.	
30-33% Ca, 60-65% Si, 3.00% max. Fe.	
Carloads	17.90
Ton lots	21.00
Less ton lots	22.50

## Calcium-Manganese-Silicon

Contract prices, cents per lb of alloy, lump, delivered.	
16-20% Ca, 14-18% Mn, 53-59% Si.	
Carloads	19.25
Ton lots	21.55
Less ton lots	22.55

## CMSZ

Contract price, cents per pound of alloy, delivered.	
Alloy 4: 45-49% Cr, 4-6% Mn, 18-21% Si, 1.25-1.75% Zr, 3.00-4.5% C.	
Alloy 5: 50-56% Cr, 4-6% Mn, 13.50-16.00% Si, 0.75 to 1.25% Zr, 3.50-5.00% C.	
Ton lots	19.75
Less ton lots	21.00

## V Foundry Alloy

Cents per pound of alloy, f.o.b. Suspension Bridge, N. Y., freight allowed, max. St. Louis. V-5: 38-42% Cr, 17-19% Si, 8-11% Mn.	
Ton lots	15.75¢
Less ton lots	17.00¢

## Graphidox No. 4

Cents per pound of alloy, f.o.b. Suspension Bridge, N. Y., freight allowed, max. St. Louis. Si 48 to 52%, Ti 9 to 11%, Ca 5 to 7%.	
Carload packed	17.00¢
Ton lots to carload packed	18.00¢
Less ton lots	19.50¢

## SMZ

Contract price, cents per pound of alloy, delivered. 60-65% Si, 5-7% Mn, 5-7% Zr, 20% Fe, ½ in. x 12 mesh.	
Ton lots	17.25
Less ton lots	18.50

## Other Ferroalloys

Alsiifer, 20% Al, 40% Si, 40% Fe, contract basis, f.o.b. Suspension Bridge, N. Y.	
Carload	7.40¢
Ton lots	8.80¢
Calcium molybdate, 45-50%, f.o.b. Langeloth, Pa., per pound contained Mo.	96¢
Ferrocolumbium, 50-60% contract basis, delivered, per pound contained Cb.	
Ton lots	\$2.90
Less ton lots	2.95
Ferromolybdenum, 55-75%, f.o.b. Langeloth, Pa., per pound contained Mo.	\$1.10
Ferrophosphorus, electrolytic, 23-26%, carlots, f.o.b. Siglo, Mt. Pleasant, Tenn., \$3 unitage, per gross ton	\$65.00
10 tons to less carload	75.00
Ferrotitanium, 40%, regular grade, 0.10% C max., f.o.b. Niagara Falls, N. Y., and Bridgeville, Pa., freight allowed east of Mississippi and north of Baltimore, ton lots, per lb contained Ti.	\$1.28
Ferrotitanium, 25%, low carbon, 0.10% C max., f.o.b. Niagara Falls, N. Y., and Bridgeville, Pa., freight allowed east of Mississippi and north of Baltimore, ton lots, per lb contained Ti.	\$1.40
Less ton lots	1.45
Ferrotitanium, 15 to 19%, high carbon, f.o.b. Niagara Falls, N. Y., freight allowed east of Mississippi and north of Baltimore, carloads per net ton	\$160.00
Ferrotungsten, standard, lump or ½ x down, packed, per pound contained W, 5 ton lots, delivered	\$2.25
Ferrovandium, 35-55%, contract basis, delivered, per pound, contained V.	
Openhearth	\$2.90
Crucible	3.00
High speed steel (Primus)	3.10
Molybdenum oxide briquets, f.o.b. Langeloth, Pa.; bags, f.o.b. Wash., Pa., per lb contained Mo.	95¢
Simanal, 20% Si, 20% Mn, 20% Al, contract basis, f.o.b. Philo, Ohio, freight allowed, per pound	
Carload, bulk, lump	11.00¢
Ton lots, bulk, lump	11.50¢
Ton lots, packed, lump	11.75¢
Less ton lots, lump	12.25¢
Vanadium pentoxide, 82-92% V <sub>2</sub> O <sub>5</sub> , contract basis, per pound contained V <sub>2</sub> O <sub>5</sub>	\$1.20
Zirconium, 35-40%, contract basis, f.o.b. plant, freight allowed, per pound of alloy.	
Ton lots	21.00¢
Zirconium, 12-15%, contract basis, lump, delivered, per lb of alloy.	
Carload, bulk	6.60¢
Boron Agents	
Contract prices, per lb of alloy, del.	
Borosil, f.o.b. Philo, Ohio, freight allowed, B 3-4%, Si 40-45%, per lb contained B	\$4.25
Bortam, f.o.b. Niagara Falls	
Ton lots, per pound	45¢
Less ton lots, per pound	50¢
Carbortam, f.o.b. Suspension Bridge, N. Y.; freight allowed, Ti 15-18%, B 1.00-1.50%, Si 2.5-3.0%, Al 1.0-2.0%.	
Ton lots, per pound	8.625¢
Ferroboration, 17.50% min. B, 1.50% max. Si, 0.50% max. Al, 0.50% max. C, 1 in. x D. Ton lots	\$1.20
F.o.b. Wash., Pa.; 100 lb and over	
10 to 14% B.	75
14 to 19% B.	1.20
19% min. B.	1.50
Grainal, f.o.b. Bridgeville, Pa. freight allowed, 100 lb and over.	
No. 1	93¢
No. 6	63¢
No. 79	45¢
Manganese-Boron 75.00% Mn, 15-20% B, 5% max. Fe, 1.50% max. Si, 3.00% max. C, 2 in. x D, delivered.	
Ton lots	\$1.67
Less ton lots	1.79
Nickel-Boron 15-18% B, 1.00% max. Al, 1.50% max. Si, 0.50% max. C, 3.00% max. Fe, balance Ni, delivered.	
Less ton lots	\$1.80
Silicaz, contract basis, delivered	
Ton lots	45.00¢

## MARKETS—PRICES—TRENDS



# SCRAP

## Iron & Steel

### Prices Decline on Limited Mill Buying

Prices were on the weak side this week and it was felt that there was little chance for a pickup before mid-January. Mills have not made any new commitments and it is expected that when they resume their buying prices will firm in a hurry. Railroad and industrial lists have been commanding top prices—several dollars above the going market quotations. However, the mills have refused to pay these prices to the brokers for the same type of material.

Dealers are again beginning to store some of the incoming material, feeling that present prices are not high enough. Foundry grades are weak and the movement in these items is very dull. This week the price declines were not as broad as during the past several weeks. The top quotation of No. 1 steel was down \$1.00 in Philadelphia and Boston; and in New York and St. Louis it was off 50¢. THE IRON AGE scrap composite is off 34¢ a ton to \$26.58 per gross ton.

**PITTSBURGH**—There was little activity in the market this week, and prices remained weak. The trade felt there was little chance of a firmer tone developing

before mid-January. No. 1 heavy melting continued at \$30.00. Low phos plate was off \$1.50.

**CHICAGO**—The market remained steady here but it is still weak. Dealers have cut their buying prices and scrap is not coming in too fast. Generation of scrap by manufacturers fell off in the past few weeks due to the lag in receiving new steel. Foundries are not busy and the steel castings business is very slow. Little activity of any kind is expected for the rest of the month. So far the increase in steel prices has had no effect on scrap prices.

**PHILADELPHIA**—No new orders were placed here, and the long period of stagnation in the market has begun to have its effect. Steel grades are quoted \$1.00 lower. Turnings are quoted 50¢ lower. The cast market has eased off a little, and machinery and yard cast are quoted at \$1.00 lower. Brokers are reported to be rushing shipments on old orders. In general, pessimism reigns throughout the scrap trade.

**NEW YORK**—On an appraisal basis the market this week is somewhat lower. No. 1 heavy melting is off 50¢ to \$19.50-\$20.00. Mills are doing little buying and some have held up on shipments. There is an easier tendency to the market and it is expected to prevail for the remainder of the year. Some dealers are holding onto their material till next year, or at least until there are better prices. Foundries are practically out of the market and orders that had been moving are just about at an end.

**DETROIT**—The Detroit market is very quiet this week with definite indications toward the weak side. Local mills are out of the market but a test of strength is scheduled for next week when bids will close on new industrial lists. A development here that has been observed is a lack of short interest in the market.

**CLEVELAND**—An unconfirmed sale of No. 1 and No. 2 heavy melting steel at \$30.00 and \$28.00 respectively to a Valley consumer stirred an otherwise quiet market here and in the Valley at press time. Superficially the market is unchanged from last week but the feeling that prices have reached the bottom is gaining adherents. Brokers are encountering some price resistance. Supporting this general position are the railroad and industrial lists which continue to go high, while mills are offering low.

**BOSTON**—The market here continues to drop off and prices are weaker. The price of No. 1 steel was off \$1.00 to \$17.50-\$18.00. Activity has fallen off and not much is expected for the remainder of the year. Cast remains dull and there is very little activity in any of these items.

**CINCINNATI**—Trading was at a seasonal low here as a result of consumer inventories and the holiday period. The market is substantially unchanged from last week, but some segments of the trade paid a major railroad \$32.00 for No. 1 heavy melting, \$33.00 for heavy breakable cast and \$33.25 for specialties, according to reports. Dealer selling is giving some indication that the price bottom of the present market has been reached, as they are now moving a car or two at a time and holding onto their tonnage. No. 2 bundles, however, are a soft item. Foundries are buying very little.

**ST. LOUIS**—With the steel mills in the St. Louis industrial district out of the market for scrap iron as a result of heavy commitments, and much of the brokers short interest covered, the prices brokers are now paying are off from 50¢ to \$1.00 a ton. Scrap is to be had at the lower prices.

**BIRMINGHAM**—No. 1 cupola cast has been sold here for \$37.00, an advance of \$1.00, but there is little current demand for any grades except cast. The market generally is very slow with orders for the year being completed and few new commitments being made.

**BUFFALO**—Dealers participating in last week's scrap sales reported no trouble finding ample material to cover commitments. No additional sales were reported at the reduced levels. One dealer cited a possibility of moving some high quality No. 1 heavy melting at a shade above the quoted range. However, the market was expected to coast through the year end holiday period with activity confined to shipments against orders on hand. With buying interest continuing to lag, an easier tone prevailed in the cast market with prices easing an additional 50¢ a ton.



### Pittsburgh

No. 1 hvy. melting	\$29.50 to \$30.00
No. 2 hvy. melting	26.50 to 27.00
No. 1 bundles	29.50 to 30.00
No. 2 bundles	24.50 to 25.00
Machine shop turn.	21.50 to 22.00
Mixed bor. and ms. turns	21.50 to 22.00
Shoveling turnings	25.50 to 26.00
Cast iron borings	24.50 to 25.00
Low phos. plate	32.00 to 32.50
Heavy turnings	25.00 to 26.00
No. 1 RR. hvy. melting	31.00 to 31.50
Scrap rails, random lght.	36.00 to 37.00
Rails 2 ft and under	38.50 to 39.50
RR. steel wheels	33.50 to 34.50
RR. spring steel	33.50 to 34.50
RR. couplers and knuckles	33.50 to 34.50
No. 1 machinery cast.	38.00 to 39.00
Mixed yard cast.	35.00 to 36.00
Heavy breakable cast.	29.00 to 30.00
Malleable	33.00 to 34.00

### Chicago

No. 1 hvy. melting	\$26.00 to \$27.00
No. 2 hvy. melting	24.00 to 25.00
No. 1 factory bundles	25.00 to 26.00
No. 1 dealers' bundles	23.00 to 24.00
No. 2 dealers' bundles	21.00 to 22.00
Machine shop turn.	17.00 to 18.00
Mixed bor. and turn.	17.00 to 18.00
Shoveling turnings	18.00 to 19.00
Cast iron borings	17.00 to 18.00
Low phos. forge crops	31.00 to 32.00
Low phos. plate	29.00 to 30.00
No. 1 RR. hvy. melting	29.00 to 30.00
Scrap rails, random lght.	35.00 to 36.00
Rerolling rails	37.00 to 38.00
Rails 2 ft and under	37.00 to 38.00
Locomotive tires, cut	32.00 to 33.00
Cut bolsters & side frames	31.00 to 32.00
Angles and splice bars	31.00 to 32.00
RR. steel car axles	37.00 to 38.00
No. 3 steel wheels	32.00 to 33.00
RR. couplers and knuckles	32.00 to 33.00
No. 1 machinery cast.	38.00 to 39.00
No. 1 agricul. cast.	37.00 to 38.00
Heavy breakable cast.	32.00 to 33.00
RR. grate bars	26.00 to 27.00
Cast iron brake shoes	30.00 to 31.00
Cast iron car wheels	34.00 to 35.00
Malleable	36.00 to 37.00

### Philadelphia

No. 1 hvy. melting	\$23.00 to \$24.00
No. 2 hvy. melting	21.50 to 22.50
No. 1 bundles	23.00 to 24.00
No. 2 bundles	18.00 to 19.00
Machine shop turn.	16.00 to 17.00
Mixed bor. and turn.	14.00 to 15.00
Shoveling turnings	17.00 to 18.00
Low phos. punchings, plate	26.00 to 27.00
Low phos. 5 ft and under	24.50 to 25.50
Low phos. bundles	24.50 to 25.50
Hvy. axle forge turn.	23.00 to 24.00
Clean cast chem. borings	28.00 to 29.00
RR. steel wheels	28.00 to 29.00
RR. spring steel	28.00 to 29.00
Rails 18 in. and under	37.00 to 39.00
No. 1 machinery cast.	36.00 to 38.00
Mixed yard cast.	33.00 to 34.00
Heavy breakable cast.	34.00 to 35.00
Cast iron car wheels	37.00 to 38.00
Malleable	39.00 to 40.00

### Cleveland

No. 1 hvy. melting	\$28.00 to \$28.50
No. 2 hvy. melting	26.00 to 26.50
No. 1 busheling	28.00 to 28.50
No. 1 bundles	28.00 to 28.50
No. 2 bundles	23.50 to 24.00
Machine shop turn.	18.00 to 18.50
Mixed bor. and turn.	19.50 to 20.00
Shoveling turnings	19.50 to 20.00
Cast iron borings	19.50 to 20.00
Low phos. 2 ft and under	29.00 to 29.50
Steel axle turn.	27.00 to 27.50
Drop forge flashings	28.00 to 28.50
No. 1 RR. hvy. melting	30.00 to 30.50
Rails 3 ft and under	43.00 to 44.00
Rails 18 in. and under	45.00 to 46.00
No. 1 machinery cast.	43.00 to 44.00
RR. cast	43.00 to 44.00
RR. grate bars	30.00 to 31.00
Stove plate	34.00 to 35.00
Malleable	38.00 to 39.00

### Youngstown

No. 1 hvy. melting	\$30.50 to \$31.00
No. 2 hvy. melting	28.50 to 29.00
No. 1 bundles	30.50 to 31.00

## Scrap IRON & STEEL Prices

Going prices as obtained in the trade by THE IRON AGE, based on representative tonnages. All prices are per gross ton delivered to consumer unless otherwise noted.

No. 2 bundles	\$25.50 to \$26.00
Machine shop turn.	20.50 to 21.00
Shoveling turnings	22.00 to 22.50
Cast iron borings	22.00 to 22.50
Low phos. plate	31.50 to 32.00

### Buffalo

No. 1 hvy. melting	\$28.00 to \$28.50
No. 2 hvy. melting	26.00 to 26.50
No. 1 busheling	26.00 to 26.50
No. 1 bundles	27.00 to 27.50
No. 2 bundles	24.50 to 25.00
Machine shop turn.	18.50 to 19.00
Mixed bor. and turn.	19.50 to 20.00
Shoveling turnings	19.50 to 20.00
Cast iron borings	19.50 to 20.00
Low phos. plate	29.50 to 30.00
Scrap rails, random lght.	33.50 to 34.00
Rails 3 ft and under	39.50 to 40.00
RR. steel wheels	35.00 to 36.00
RR. spring steel	35.00 to 36.00
RR. couplers and knuckles	35.00 to 36.00
No. 1 machinery cast.	38.00 to 38.50
No. 1 cupola cast.	35.00 to 36.00
Stove plate	33.50 to 34.00
Small indus. malleable	30.00 to 30.50

### Birmingham

No. 1 hvy. melting	\$25.00
No. 2 hvy. melting	24.00
No. 2 bundles	22.00
No. 1 busheling	24.00
Machine shop turn.	\$16.00 to 17.00
Shoveling turnings	20.00 to 21.00
Cast iron borings	18.00
Bar crops and plate	30.00 to 31.00
Structural and plate	30.00 to 31.00
No. 1 RR. hvy. melt.	26.00 to 27.00
Scrap rails, random lght.	30.00 to 31.00
Rerolling rails	36.00 to 37.00
Rails 2 ft and under	35.50 to 36.00
Angles & splice bars	35.00 to 36.00
Std. steel axles	28.00 to 29.00
No. 1 cupola cast.	36.00 to 37.00
Stove plate	29.00 to 30.00
Cast iron car wheels	28.00 to 29.00

### St. Louis

No. 1 hvy. melting	\$30.00 to \$31.00
No. 2 hvy. melting	26.00 to 27.00
No. 2 bundled sheets	26.00 to 27.00
Machine shop turn.	16.00 to 17.00
Shoveling turnings	20.00 to 21.00
Rails, random lengths	32.00 to 33.00
Rails 3 ft and under	36.00 to 37.00
Locomotive tires, uncut	27.00 to 28.00
Angles and splice bars	34.00 to 35.00
Std. steel car axles	39.00 to 41.00
RR. spring steel	31.00 to 32.00
No. 1 machinery cast.	36.00 to 37.00
Hvy. breakable cast.	30.00 to 31.00
Cast iron brake shoes	30.00 to 31.00
Stove plate	30.00 to 31.00
Cast iron car wheels	34.00 to 35.00
Malleable	28.00 to 30.00

### New York

Brokers' buying prices per gross ton, on cars:	
No. 1 hvy. melting	\$19.50 to \$20.00
No. 2 hvy. melting	18.00 to 18.50
No. 2 bundles	17.00 to 17.50
Machine shop turn.	10.50 to 11.00
Mixed bor. and turn.	10.50 to 11.00
Shoveling turnings	11.50 to 12.00
Clean cast chem. bor.	23.00 to 24.00
No. 1 machinery cast.	28.50 to 29.50
Mixed yard cast.	27.00 to 28.00
Charging box cast.	27.00 to 28.00
Heavy breakable cast.	27.00 to 28.00
Unstrp. motor blocks	22.00 to 23.00

### Boston

Brokers' buying prices per gross ton, on cars:	
No. 1 hvy. melting	\$17.50 to \$18.00
No. 2 hvy. melting	16.50 to 17.00
No. 1 bundles	17.50 to 18.00

No. 2 bundles	\$14.50 to \$15.00
Machine shop turn.	10.00 to 10.50
Mixed bor. and turn.	10.00 to 10.50
Shoveling turnings	12.00 to 12.50
No. 1 busheling	17.00 to 17.50
Clean cast chem. borings	18.00 to 18.50
No. 1 machinery cast.	32.00 to 34.00
No. 2 machinery cast.	28.00 to 29.00
Heavy breakable cast.	25.00 to 26.00
Stove plate	25.00 to 26.00

### Detroit

Brokers' buying prices per gross ton, on cars:	
No. 1 hvy. melting	\$24.00 to \$25.00
No. 2 hvy. melting	22.00 to 23.00
No. 1 bundles	26.00 to 27.00
New busheling	25.00 to 26.00
Flashings	24.00 to 25.00
Machine shop turn.	15.00 to 15.50
Mixed bor. and turn.	15.00 to 15.50
Shoveling turnings	16.50 to 17.00
Cast iron borings	16.50 to 17.00
Low phos. plate	26.00 to 27.00
No. 1 cupola cast	35.00 to 36.00
Heavy breakable cast.	28.00 to 29.00
Stove plate	27.00 to 28.00
Automotive cast	35.00 to 36.00

### Cincinnati

Per gross ton, f.o.b. cars:	
No. 1 hvy. melting	\$26.00 to \$26.50
No. 2 hvy. melting	23.50 to 24.00
No. 1 bundles	26.00 to 26.50
No. 2 bundles	21.50 to 22.00
Machine shop turn.	13.50 to 14.00
Mixed bor. and turn.	16.50 to 17.00
Shoveling turnings	16.50 to 17.00
Cast iron borings	16.50 to 17.00
Low phos. 18 in. under	33.00 to 34.00
Rails, random lengths	34.00 to 35.00
Rails, 18 in. and under	42.00 to 43.00
No. 1 cupola cast	39.00 to 40.00
Hvy. breakable cast	32.00 to 33.00
Drop broken cast	42.00 to 43.00

### San Francisco

No. 1 hvy. melting	\$20.00
No. 2 hvy. melting	18.00
No. 1 bundles	16.00
No. 2 bundles	16.00
No. 3 bundles	13.00
Machine shop turn	9.00
Elec. fur. 1 ft and under	28.00
No. 1 RR. hvy. melting	20.00
Scrap rails, random lght.	20.00
No. 1 cupola cast	\$30.00 to 35.00

### Los Angeles

No. 1 hvy. melting	\$20.00
No. 2 hvy. melting	18.00
No. 1 bundles	16.00
No. 2 bundles	16.00
No. 3 bundles	13.00
Mach. shop turn.	12.00
Elec. fur. 1 ft and under	30.00
No. 1 RR. hvy. melting	20.00
No. 1 cupola cast	\$35.00 to 38.00

### Seattle

No. 1 hvy. melting	\$18.00
No. 2 hvy. melting	18.00
No. 1 bundles	16.00
No. 2 bundles	16.00
No. 3 bundles	12.00
Elec. fur. 1 ft. and under	\$25.00 to 28.00
RR. hvy. melting	19.00
No. 1 cupola cast	30.00
Heavy breakable cast.	20.00

### Hamilton, Ont.

No. 1 hvy. melting	\$24.00
No. 1 bundles	16.00
No. 2 bundles	16.00
Mechanical bundles	22.00
Mixed steel scrap	20.00
Mixed bor. and turn.	18.00
Rails, remelting	24.00
Rails, rerolling	27.00
Bushelings	18.50
Bush., new fact, prep'd.	22.00
Bush., new fact, unprep'd	17.00
Short steel turnings	18.00
Cast scrap	\$40.00 to 43.00





## SCRAP-AT THE TURN OF THE CENTURY

In the late 90's a new process was developed in Eastern Pennsylvania for manufacturing wrought iron bars by reheating prepared scrap.

Because large capital investments were not needed by these operators, the box pile method, as it was called, became an important phase of the mill operations of the time.

This method entailed cutting scrap, piling and wiring it in small packs, and bringing it to a white heat. The heated box piles were passed through

rollers until the desired shape was reached.

A few manufacturers still produce flats, rounds, squares and reinforcing bars by the box pile method. At the turn of the century, Luria Brothers & Company, Inc. furnished scrap for the specific need of that day. Today, we have the expanded facilities and organization to supply the current requirements of mills, foundries, chemical plants and other consumers of scrap—regardless of amount or specification.

CONSULT OUR NEAREST OFFICE FOR THE PURCHASE AND SALE OF SCRAP

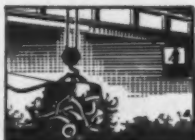
## LURIA BROTHERS AND COMPANY, INC.

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Philadelphia 7, Pennsylvania

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**LEADERS IN IRON AND STEEL SCRAP SINCE 1889**

December 29, 1949

77

## Comparison of Prices

Steel prices on this page are the average of various f.o.b. quotations of major producing areas: Pittsburgh, Chicago, Gary, Cleveland, Youngstown.

Flat-Rolled Steel:	Dec. 27, 1949	Dec. 20, 1949	Nov. 29, 1949	Dec. 28, 1948
(cents per pound)	1949	1949	1949	1948
Hot-rolled sheets	3.35	3.35	3.25	3.26
Cold-rolled sheets	4.10	4.10	4.00	4.00
Galvanized sheets (10 ga)	4.40	4.40	4.40	4.40
Hot-rolled strip	3.25	3.25	3.25	3.265
Cold-rolled strip	4.18	4.18	4.038	4.063
Plates	3.50	3.50	3.40	3.42
Plates wrought iron	7.85	7.85	7.85	7.85
Stains C-R strip	33.00	33.00	33.00	33.25

### Tin and Terneplate:

(dollars per base box)				
Tinplate (1.50 lb) cokes	\$7.75	\$7.75	\$7.75	\$6.80
Tinplate, electro (0.50 lb)	6.70	6.70	6.70	6.00
Special coated mfg. ternes	6.65	6.65	6.65	5.90

### Bars and Shapes:

(cents per pound)				
Merchant bars	3.45	3.45	3.35	3.37
Cold-finished bars	4.15†	3.995	3.995	3.995
Alloy bars	3.95	3.95	3.75	3.75
Structural shapes	3.25	3.25	3.25	3.25
Stainless bars (No. 302)	28.50	28.50	28.50	28.50
Wrought iron bars	9.50	9.50	9.50	9.50

### Wire:

(cents per pound)				
Bright wire	4.50	4.50	4.15	4.256

### Rails:

(dollars per 100 lb)				
Heavy rails	\$3.40	\$3.40	\$3.20	\$3.20
Light rails	3.75	3.75	3.55	3.55

### Semifinished Steel:

(dollars per net ton)				
Rerolling billets	\$53.00	\$53.00	\$52.00	\$52.00
Slabs, rerolling	53.00	53.00	52.00	52.00
Forging billets	63.00	63.00	61.00	61.00
Alloy blooms, billets, slabs	66.00	63.00	63.00	63.00

### Wire rod and Skelp:

(cents per pound)				
Wire rods	3.85	3.85	3.40	3.619
Skelp	3.15	3.15	3.25	3.25

\*Revised

†Tentative

Price advances over previous week are printed in Heavy Type; declines appear in *Italics*.

### Pig Iron:

	Dec. 27, 1949	Dec. 20, 1949	Nov. 29, 1949	Dec. 28, 1948
(per gross ton)	1949	1949	1949	1948
No. 2, foundry, Phila.	\$50.42	\$50.42	\$50.42	\$51.56
No. 2, Valley furnace	46.50	46.50	46.50	46.50
No. 2, Southern Cin'ti.	46.08	46.08	46.08	49.47
No. 2, Birmingham	39.38	39.38	39.38	43.38
No. 2, foundry, Chicago†	46.50	46.50	46.50	46.50
Basic del'd Philadelphia	49.92	49.92	49.92	50.76
Basic, Valley furnace	46.00	46.00	46.00	46.00
Malleable, Chicago†	46.50	46.50	46.50	46.50
Malleable, Valley	46.50	46.50	46.50	46.50
Charcoal, Chicago	68.56	68.56	68.56	73.78
Ferromanganese†	173.40	173.40	173.40	161.71

†The switching charge for delivery to foundries in the Chicago district is \$1 per ton.

†Average of U. S. prices quoted on Ferroalloy page.

### Scrap:

(per gross ton)				
Heavy melt'g steel, P'gh.	\$29.75	\$29.75	\$31.75	\$42.75
Heavy melt'g steel, Phila.	23.50	24.50	25.50	44.50
Heavy melt'g steel, Ch'go	26.50	26.50	29.50	41.75
No. 1 hy. com. sh't, Det.	26.50	26.50	29.50	38.00
Low phos. Young'n.	31.75	31.75	33.75	47.75
No. 1, cast, Pittsburgh	38.50	38.50	39.50	69.00
No. 1, cast, Philadelphia	37.00	38.00	38.00	65.50
No. 1, cast, Chicago	38.50	38.50	44.50	68.50

### Coke: Connellsville:

(per net ton at oven)				
Furnace coke, prompt	\$14.00	\$14.00	\$14.00	\$15.00
Foundry coke, prompt	15.75	15.75	15.75	17.00

### Nonferrous Metals:

(cents per pound to large buyers)				
Copper, electro, Conn.	18.50	18.50	18.50	23.50
Copper, Lake Conn.	18.625	18.625	18.625	23.625
Tin Straits, New York	78.00	78.25	85.00	\$1.03
Zinc, East St. Louis	9.75	9.75	9.75	17.50
Lead, St. Louis	11.80	11.80	11.80	21.30
Aluminum, virgin	17.00	17.00	17.00	17.00
Nickel electrolytic	42.97	42.97	42.97	42.90
Magnesium, ingot	20.50	20.50	20.50	20.50
Antimony, Laredo, Tex.	32.00	32.00	32.00	\$5.00

Starting with the issue of May 12, 1949, the weighted finished steel composite was revised for the years 1941 to date. The weights used are based on the average product shipments for the 7 years 1937 to 1940 inclusive and 1946 to 1948 inclusive. The use of quarterly figures has been eliminated because it was too sensitive. (See p. 139 of May 12, 1949, issue.)

## Composite Prices

### Finished Steel Base Price

Dec. 27, 1949	3.836¢ per lb.
One week ago	3.836¢ per lb.*
One month ago	3.705¢ per lb.
One year ago	3.720¢ per lb.

	High	Low		
1949....	3.836¢	Dec. 20 3.705¢	May 3	
1948....	3.721¢	July 27 3.193¢	Jan. 1	
1947....	3.193¢	July 29 2.848¢	Jan. 1	
1946....	2.848¢	Dec. 31 2.464¢	Jan. 1	
1945....	2.464¢	May 29 2.396¢	Jan. 1	
1944....	2.396¢			
1943....	2.396¢			
1942....	2.396¢			
1941....	2.396¢			
1940....	2.30467¢	Jan. 2 2.24107¢	Apr. 16	
1939....	2.35367¢	Jan. 3 2.26689¢	May 16	
1938....	2.58414¢	Jan. 4 2.27207¢	Oct. 18	
1937....	2.58414¢	Mar. 9 2.32263¢	Jan. 4	
1936....	2.32263¢	Dec. 28 2.05200¢	Mar. 10	
1935....	2.07642¢	Oct. 1 2.06492¢	Jan. 8	
1934....	2.15367¢	Apr. 24 1.95757¢	Jan. 2	
1933....	1.95578¢	Oct. 3 1.75836¢	May 2	
1932....	1.89196¢	July 5 1.83901¢	Mar. 1	
1931....	1.99626¢	Jan. 13 1.86586¢	Dec. 29	
1929....	2.31773¢	May 28 2.26498¢	Oct. 29	

Weighted index based on steel bars, shapes, plates, wire, rails, black pipe, hot and cold-rolled sheets and strip, representing major portion of finished steel shipments. Index recapitulated in Aug. 28, 1941, issue and in May 12, 1949.

### Fig Iron

....\$45.88 per gross ton....	
.... 45.88 per gross ton....	
.... 45.88 per gross ton....	
.... 46.91 per gross ton....	

### Scrap Steel

....\$26.58 per gross ton....	
.... 26.92 per gross ton....	
.... 28.92 per gross ton....	
.... 43.00 per gross ton....	

	High	Low		
\$46.82 Jan. 4		\$45.88 Sept. 6	\$43.00 Jan. 1	\$19.33 June 28
46.91 Oct. 12		39.58 Jan. 6	43.16 July 27	39.75 Mar. 9
37.98 Dec. 30		30.14 Jan. 7	42.58 Oct. 28	29.50 May 20
30.14 Dec. 10		25.37 Jan. 1	31.17 Dec. 24	19.17 Jan. 1
25.37 Oct. 23		23.61 Jan. 2	19.17 Jan. 2	18.92 May 22
	\$23.61	\$23.61	19.17 Jan. 11	15.76 Oct. 24
	23.61	23.61	\$19.17	\$19.17
	23.61	23.61	19.17	19.17
\$23.61 Mar. 20		\$23.45 Jan. 2	\$22.00 Jan. 7	\$19.17 Apr. 10
23.45 Dec. 23		22.61 Jan. 2	21.83 Dec. 30	16.04 Apr. 9
22.61 Sept. 19		20.61 Sept. 12	22.50 Oct. 3	14.08 May 16
23.25 June 21		19.61 July 6	15.00 Nov. 22	11.00 June 7
23.25 Mar. 9		20.25 Feb. 16	21.92 Mar. 30	12.67 June 9
19.74 Nov. 24		18.73 Aug. 11	17.75 Dec. 21	12.67 June 8
18.84 Nov. 5		17.53 May 14	13.42 Dec. 10	10.33 Apr. 29
17.90 May 1		16.90 Jan. 27	13.00 Mar. 13	9.50 Sept. 25
16.90 Dec. 5		13.56 Jan. 3	12.25 Aug. 8	6.75 Jan. 3
14.81 Jan. 5		13.56 Dec. 6	8.50 Jan. 12	6.43 July 5
15.90 Jan. 6		14.79 Dec. 15	11.33 Jan. 6	8.50 Dec. 29
18.71 May 14		18.21 Dec. 17	17.58 Jan. 29	14.08 Dec. 8

Based on averages for basic iron at Valley furnaces and foundry iron at Chicago, Philadelphia, Buffalo, Valley and Birmingham.

Average of No. 1 heavy melting steel scrap delivered to consumers at Pittsburgh, Philadelphia and Chicago.

**KEYWELL . . . DEPENDABLE SERVICE**

*for Over* **30 YEARS**

**STAINLESS  
STEEL**

•  
**ELECTRIC  
FURNACE**

•  
**BLAST  
FURNACE**

•  
**CAST IRON**

•  
**OPEN  
HEARTH**

**MILL SUPPLIERS  
OF  
IRON & STEEL  
SCRAP**

**Samuel G. Keywell**

**Herbert W. Smith**

**Barney L. Keywell**

**THE SAMUEL G. KEYWELL CO. INC.**

**2900 ST. JEAN, DETROIT 14, MICH., VALLEY 2-8800**

**PITTSBURGH OFFICES: 3111 JENKINS ARCADE BLDG., PITTSBURGH 22, PA.**

**E. CLYDE GRIMM, VICE-PRESIDENT — TELEPHONE: GRANT 1-8030**



# STEEL PRICES

Smaller numbers in price boxes indicate producing companies. For main office locations, see key on facing page. Base prices at producing points apply only to sizes and grades produced in these areas. Prices are in cents per lb unless otherwise noted. Extras apply.

	Pittsburgh	Chicago	Gary	Cleveland	Canton Massillon	Middle- town	Youngs- town	Bethle- hem	Buffalo	Cosho- hocken	Johns- town	Spar- rows Point	Granite City	Detroit
<b>INGOTS</b>														
Carbon forging, net ton	\$80.00 1													\$50.00 21
Alloy net ton	\$81.00 1.17													\$51.00 21
<b>BILLETS, BLOOMS, SLABS</b>														
Carbon, rerolling net ton	\$53.00 1	\$53.00 1	\$53.00 1				\$57.00 12		\$53.00 2		\$53.00 2			
Carbon forging billets, net ton	\$63.00 1	\$63.00 1.4	\$63.00 1.8	\$63.00 4			\$63.00 25		\$63.00 2.4		\$63.00 2			\$81.00 21
Alloy, net ton	\$66.00 1.17	\$66.00 1.4	\$66.00 1		\$66.00 4.42		\$66.00 12	\$66.00 2	\$66.00 2.4	\$66.00 26	\$66.00 2			\$66.00 21
<b>SHEET BARS</b>							\$57.00 12							
<b>PIPE SKELP</b>	3.15 1.5						3.15 1.4							
<b>WIRE RODS</b>	3.85 2.18	3.85 2.4.22	3.85 6	3.85 2			3.85 6				3.85 2	3.85 2		
<b>SHEETS</b>														
Hot-rolled (18 ga. & hvr.)	3.35 1.5.9.15	3.35 22	3.35 1.6.8	3.35 4.5			3.35 1.4.6.12		3.35 2	3.45 26		3.35 2		3.55 12
Cold-rolled	4.10 <sup>1-5</sup> 7.9.16.68		4.10 1.6.8	4.10 4.5		4.10 7	4.10 4.6		4.10 2			4.10 2	4.20 22	4.40 12
Galvanized (10 gage)	4.40 1.9.15		4.40 1.8		4.40 4		4.40 <sup>4</sup> 5.65 <sup>4</sup>					4.40 2		
Enameling (12 gage)	4.40 1		4.40 1.8	4.40 4		4.40 7	4.40 <sup>6</sup> 4.907 <sup>6</sup>						4.60 22	4.70 12
Long turnes (10 gage)	4.80 9.15		4.80 1			4.80 7								
Hi Str. low alloy, h.r.	5.05 1.5.9	5.05 2	5.05 1.6.8	5.05 4.5			5.05 1.4.6.12		5.05 2	5.05 26		5.05 2		12
Hi Str. low alloy, c.r.	6.20 1.5.9		6.20 1.6.8	6.20 4.5			6.20 4.6.12		6.20 2			6.20 2		12
Hi Str. low alloy, galv.	6.75 1			6.75 4	6.75 4							6.75 2		
<b>STRIP</b>														
Hot-rolled (over 6 in.)	3.25 5.7.9.25	3.25 22.60	3.25 1.6.8	3.25 5			3.25 1.4.6.12		3.25 2	3.35 26		3.25 2		3.55 <sup>17</sup> 3.45 <sup>12</sup>
Cold-rolled	4.15 5.7.9.68	4.30 60	4.15 2	4.15 2.5		4.15 7	4.15 4.6.12.40.48.49		4.15 2			4.15 2		4.40 <sup>18</sup> 4.35 <sup>12</sup> - 17
Hi Str. low alloy, h.r.	4.95 9		4.95 1.6.8	4.95 5			4.95 1.4.6.12		4.95 2	4.95 26		4.95 2		5.15 12
Hi Str. low alloy, c.r.	6.05 9			6.05 2.5			6.05 4.6.12		6.05 2			6.05 2		6.25 12
<b>TINPLATE</b>														
Cokes, 1.50-lb, base box	\$7.75 1.0.9.15		\$7.75 1.6.8				\$7.75 4					\$7.85 2	\$7.95 22	
Electrolytic 0.25, 0.50, 0.75 lb box	Deduct \$1.30, \$1.05 and 75¢ respectively from 1.50-lb coke base box price													
<b>BLACKPLATE, 29 gage</b>	5.30 1.5.15		5.30 1.6.8				5.30 4					5.40 2	5.50 22	
Hollowware enameling														
<b>BARS</b>														
Carbon steel	3.45 1.5.9.17	3.45 1.4.22	3.45 1.6.8	3.45 4	3.45 4		3.45 1.4.6		3.45 2.4		3.45 2			3.65 12
Reinforcing†	3.45 1.5	3.45 4	3.45 1.6.8	3.45 4	3.45 4		3.45 1.4.6		3.45 2.4		3.45 2	3.45 2		
Cold-finished*	3.95 <sup>5</sup> 4.00 <sup>5</sup> - 4 17.62.69.71	4.00 <sup>5</sup> 22.69.70	4.00 4.73.74	4.00 2.61	4.00 4.22		4.00 6.40.67		4.00 70					4.30 12
Alloy, hot-rolled	3.95 1.17	3.95 1.4.22	3.95 1.6.8		3.95 4.42		3.95 1.6.25	3.95 2	3.95 2.4		3.95 2			4.15 12
Alloy- cold-drawn*	4.65 2.17.62.69.71	4.65 2.22.69.70	4.65 4.73.74	4.65 2.61	4.65 4.42.82		4.65 6.25.67	4.65 2	4.65 2.70					
Hi Str. low alloy, h.r.	5.20 1.5		5.20 1.6.8	5.20 4			5.20 1.6	5.20 2	5.20 2		5.20 2			5.40 12
<b>PLATE</b>														
Carbon Steel	3.50 1.5	3.50 1	3.50 1.6.8	3.50 4			3.50 12		3.50 2	3.60 26	3.50 2	3.50 2		12
Floor plates	4.55 1	4.55 1	4.55 2	4.55 5						4.55 26				
Alloy	4.40 1	4.40 1	4.40 1				4.40 12			4.40 26	4.40 2	4.40 2		
Hi St. low alloy	5.35 1.5	5.35 1	5.35 1.8	5.35 4.5			5.35 6			5.35 26	5.35 2	5.35 2		12
<b>SHAPES, Structural</b>														
Hi Str. low alloy	5.15 1.5	5.15 1	5.15 1.6.8				5.15 6	5.15 2	5.15 2		5.15 2			
<b>MANUFACTURERS' WIRE</b>														
Bright	4.50 2.5.15	4.50 <sup>12</sup> 4.22.24		4.50 2.77			4.50 6				4.50 2	4.60 2	Duluth = 4.50 <sup>3</sup> Pueblo = 4.4	
<b>PILING, Steel sheet</b>	4.20 <sup>1</sup> 4.05 <sup>9</sup>	4.20 1							4.20 2					

\* Not reflecting new price, see p. 71.

Smaller numbers indicate producing companies. See key at right.  
Prices are in cents per lb unless otherwise noted. Extras apply.

IRON AGE

## STEEL PRICES

## KEY TO STEEL PRODUCERS

With Principal Offices

- 1 Carnegie-Illinois Steel Corp., Pittsburgh
- 2 American Steel & Wire Co., Cleveland
- 3 Bethlehem Steel Co., Bethlehem
- 4 Republic Steel Corp., Cleveland
- 5 Jones & Laughlin Steel Corp., Pittsburgh
- 6 Youngstown Sheet & Tube Co., Youngstown
- 7 Armco Steel Corp., Middletown, Ohio
- 8 Inland Steel Co., Chicago
- 9 Weirton Steel Co., Weirton, W. Va.
- 10 National Tube Co., Pittsburgh
- 11 Tennessee Coal, Iron & R. R. Co., Birmingham
- 12 Great Lakes Steel Corp., Detroit
- 13 Sharon Steel Corp., Sharon, Pa.
- 14 Colorado Fuel & Iron Corp., Denver
- 15 Wheeling Steel Corp., Wheeling, W. Va.
- 16 Geneva Steel Co., Salt Lake City
- 17 Crucible Steel Co. of America, New York
- 18 Pittsburgh Steel Co., Pittsburgh
- 19 Kaiser Co., Inc., Oakland, Calif.
- 20 Portsmouth Steel Corp., Portsmouth, Ohio
- 21 Lukens Steel Co., Coatsville, Pa.
- 22 Granite City Steel Co., Granite City, Ill.
- 23 Wisconsin Steel Co., South Chicago, Ill.
- 24 Columbia Steel Co., San Francisco
- 25 Copperweld Steel Co., Glassport, Pa.
- 26 Alan Wood Steel Co., Conshohocken, Pa.
- 27 Calif. Cold Rolled Steel Corp., Los Angeles
- 28 Allegheny Ludlum Steel Corp., Pittsburgh
- 29 Worth Steel Co., Claymont, Del.
- 30 Continental Steel Corp., Kokomo, Ind.
- 31 Rotary Electric Steel Co., Detroit
- 32 Laclede Steel Co., St. Louis
- 33 Northwestern Steel & Wire Co., Sterling, Ill.
- 34 Keystone Steel & Wire Co., Peoria, Ill.
- 35 Central Iron & Steel Co., Harrisburg, Pa.
- 36 Carpenter Steel Co., Reading, Pa.
- 37 Eastern Stainless Steel Corp., Baltimore
- 38 Washington Steel Corp., Washington, Pa.
- 39 Jessop Steel Co., Washington, Pa.
- 40 Blair Strip Steel Co., New Castle, Pa.
- 41 Superior Steel Corp., Carnegie, Pa.
- 42 Timken Steel & Tube Div., Canton, Ohio
- 43 Babcock & Wilcox Tube Co., Beaver Falls, Pa.
- 44 Reeves Steel & Mfg. Co., Dover, Ohio
- 45 John A. Roebling's Sons Co., Trenton, N. J.
- 46 Simonds Saw & Steel Co., Fitchburg, Mass.
- 47 McLouth Steel Corp., Detroit
- 48 Cold Metal Products Co., Youngstown
- 49 Thomas Steel Co., Warren, Ohio
- 50 Wilson Steel & Wire Co., Chicago
- 51 Sweet's Steel Co., Williamsport, Pa.
- 52 Superior Drawn Steel Co., Monaca, Pa.
- 53 A. M. Byers Co., Pittsburgh
- 54 Firth Sterling Steel & Carbide Corp., McKeesport, Pa.
- 55 Ingersoll Steel Div., Chicago
- 56 Phoenix Iron & Steel Co., Phoenixville, Pa.
- 57 Fitzsimons Steel Co., Youngstown
- 58 Stanley Works, New Britain, Conn.
- 59 Universal-Cyclops Steel Corp., Bridgeville, Pa.
- 60 Vanadium-Alloys Steel Co., Latrobe, Pa.
- 61 Cuyahoga Steel & Wire Co., Cleveland
- 62 Bethlehem Pacific Coast Steel Corp., San Francisco
- 63 Follansbee Steel Corp., Pittsburgh
- 64 Niles Rolling Mill Co., Niles, Ohio
- 65 Atlantic Steel Co., Atlanta
- 66 Acme Steel Co., Chicago
- 67 Joslyn Mfg. & Supply Co., Chicago
- 68 Detroit Steel Corp., Detroit
- 69 Wyckoff Steel Co., Pittsburgh
- 70 Bliss & Laughlin, Inc., Harvey, Ill.
- 71 Columbia Steel & Shaffing Co., Pittsburgh
- 72 Cumberland Steel Co., Cumberland, Md.
- 73 La Salle Steel Co., Chicago
- 74 Monarch Steel Co., Inc., Indianapolis
- 75 Empire Steel Co., Mansfield, Ohio
- 76 Mahoning Valley Steel Co., Niles, Ohio
- 77 Oliver Iron & Steel Co., Pittsburgh
- 78 Pittsburgh Screw & Bolt Co., Pittsburgh
- 79 Standard Forgings Corp., Chicago
- 80 Driver Harris Co., Harrison, N. J.
- 81 Detroit Tube & Steel Div., Detroit
- 82 Reliance Div., Eaton Mfg. Co., Massillon, Ohio
- 83 Sheffield Steel Corp., Kansas City

INGOTS  
Carbon forging, net ton

Alloy, net ton

BILLETS, BLOOMS, SLABS  
Carbon, rerolling, net ton

Carbon forging billets, net ton

Alloy net ton

SHEET BARS

PIPE SKELP

WIRE RODS

SHEETS  
Hot-rolled (18 ga. & hvr.)

Cold-rolled

Galvanized (10 gage)

Enameling (12 gage)

Long ternes (10 gage)

Hi Str. low alloy, h.r.

Hi Str. low alloy, c.r.

Hi Str. low alloy, galv.

STRIP  
Hot-rolled

Cold-rolled

Hi Str. low alloy, h.r.

Hi Str. low alloy, c.r.

TINPLATE  
Cokes, 1.50-lb. base box

Electrolytic  
0.25, 0.50, 0.75 lb box

BLACKPLATE, 29 gage  
Hollowware enameling

BARS  
Carbon steel

Reinforcing†

Cold-finished\*

Alloy, hot-rolled

Alloy, cold-drawn\*

Hi Str. low alloy, h.r.

PLATE  
Carbon steel

Floor plates

Alloy

Hi Str. low alloy

SHAPES, Structural

Hi Str. low alloy

MANUFACTURERS' WIRE  
Bright

Deduct \$1.36, \$1.06 and 75¢ respectively from 1.50-lb coke base box price

Kansas City	Houston	Birmingham	WEST COAST Seattle, San Francisco, Los Angeles, Fontana	
	\$39.50 55			
		\$32.00 11	F= \$ 19	
	\$39.00 55	\$31.00 11	F= \$ 19	Geneva= \$31.00 <sup>16</sup>
			F= \$ 19	
				Mansfield= \$58.00 G. T. <sup>78</sup> Portsmouth= \$55.90 <sup>20</sup>
	3.95 55		SF, LA= 4.65 <sup>24</sup> LA= 4.20 <sup>53</sup>	Portsmouth= 3.40 <sup>20</sup> Worcester= 3.70 <sup>2</sup>
		3.25 4.11	SF, LA= 4.05 <sup>24</sup> F= 19	Kokomo, <sup>20</sup> Ashland <sup>7</sup> = 3.35 Niles= 3.75 <sup>76</sup>
		4.00 11	SF= 5.05 <sup>24</sup> F= 19	
		4.40 4.11	SF, LA= 5.15 <sup>24</sup>	Ashland= 4.40 <sup>7</sup> Kokomo= 4.80 <sup>20</sup>
		4.95 11		
3.95 55	3.95 55	3.25 11	SF, LA= 4.00 <sup>52</sup> F= 19 S= 4.25 <sup>53</sup>	Ashland= 3.25 <sup>7</sup> Atlanta= 3.40 <sup>53</sup>
			F= 19 LA= 6.00 <sup>27</sup>	New Haven= 4.85 <sup>28</sup>
		4.95 11		
			F= 19	
		\$7.65 11	SF= \$8.50 <sup>24</sup>	

Notes: †Special coated mfg ternes, deduct \$1.10 from 1.50-lb coke base box price.  
Can-making quality blackplate, 55 to 128-lb, deduct \$2.00 from 1.50-lb coke base box.  
†Straight lengths only from producer to fabricator.

reflecting new price, see p. 71.

December 29, 1949



# MERCHANT WIRE PRODUCTS

To the dealer, f.o.b. mill

	Base Column Pittsburg, Calif.
Standard & coated nails* 106	125
Woven wire fence† 116	139
Fence posts, carloads†† 112	
Single loop bale ties... 113	137
Galvanized barbed wire** 126	146
Twisted barbed wire... 126	

\* Pgh., Chi., Duluth; Worcester, 6 columns higher; Houston, 8 columns higher; Kansas City, 12 columns higher. † 15% gage and heavier. \*\* On 80 rod spools, in carloads. †† Duluth, Joliet and Johnstown.

	Base per 100 lb	Pittsburg, Calif.
Annealed fence wire†... \$5.15	\$6.10	
Annealed, galv. fencing† 5.60	6.55	
Cut nails, carloads†† ... 6.75		

† Add 30¢ at Worcester; 10¢ at Sparrows Pt.  
†† Less 20¢ to jobbers.

**PRODUCING POINTS** — Standard, Coated or galvanized nails, woven wire fence, bale ties, and barbed wire: Alabama City, Ala., 4; Atlanta, 65; Alliquippa, Pa. (except bale ties), 5; Bartonville, Ill. (except bale ties), 34; Chicago, 4; Donora, Pa., 2; Duluth, 2; Fairfield, Ala., 11; Johnstown, Pa. (except bale ties), 3; Joliet, Ill., 2; Kokomo, Ind., 30; Minnequa, Colo., 14; Monessen, Pa. (except bale ties), 18; Pittsburgh, Calif., 24; Portsmouth, Ohio, 20; Rankin, Pa. (except woven fence), 3; Sterling, Ill., 33; San Francisco (except nails and woven fence), 14; Torrance, Calif. (nails only), 24; Worcester (nails only), 2; Houston (except bale ties), 83; Kansas City (except bale ties), 83.

Fence posts: Duluth, 2; Johnstown, Pa., 3; Joliet, Ill., 2; Minnequa, Colo., 14; Moline, Ill., 4; Williamsport, Pa., 51.

Cut nails: Wheeling, W. Va., 15; Conshohocken, Pa., 26.

## CLAD STEEL

Base prices, cents per pound, f.o.b. mill

	Plate	Sheet
<b>Stainless-carbon</b>		
No. 304, 20 pct.		
Coatesville, Pa. (21)...	*26.50	
Washgtn, Pa. (39)...	*26.50	
Claymont, Del. (29)...	*26.50	
Conshohocken, Pa. (26)	*22.50	
New Castle, Ind. (55)...	*26.50	*24.00
<b>Nickel-carbon</b>		
10 pct, Coatesville, (26)...	27.50	
<b>Inconel-carbon</b>		
10 pct, Coatesville, (21)...	36.00	
<b>Monel-carbon</b>		
10 pct, Coatesville, (21)...	29.00	
No. 302 Stainless-copper-stainless, Carnegie, Pa. (41)		75.00
Aluminized steel sheets, hot dip, Butler, Pa., (7)...		7.75

\* Includes annealing and pickling, or sandblasting.

## ELECTRICAL SHEETS

22 gage, HR cut lengths, f.o.b. mill

	Cents per lb
Armature	6.45
Electrical	6.95
Motor	7.95
Dynamo	8.75
Transformer 72	9.30
Transformer 65	9.85
Transformer 58	10.55
Transformer 52	11.35

**PRODUCING POINTS**—Beech Bottom, W. Va., 18; Brackenridge, Pa., 28; Follansbee, W. Va., 63; Granite City, Ill., 22; Indiana Harbor, Ind., 8; Mansfield, Ohio, 75; Niles, Ohio, 64, 76; Vandergrift, Pa., 1; Warren, Ohio, 4; Zanesville, Ohio, 7.

Numbers after producing points correspond to steel producers. See key on Steel Price page.

# BOLTS, NUTS, RIVETS, SET SCREWS

## Consumer Prices

(Bolts and nuts f.o.b. mill Pittsburgh, Cleveland, Birmingham or Chicago)  
Base discount less case lots

## Machine and Carriage Bolts

	Pct Off List
½ in. & smaller x 6 in. & shorter...	35
9/16 & ¾ in. x 6 in. & shorter...	37
¾ in. & larger x 6 in. shorter...	34
All diam., longer than 6 in. ....	30
Lag, all diam over 6 in. & longer...	35
Lag, all diam x 6 in. & shorter...	37
Plow bolts	47

## Nuts, Cold Punched or Hot Pressed

(Hexagon or Square)

½ in. and smaller	35
9/16 to 1 in. inclusive	34
1 ¼ to 1 ½ in. inclusive	32
1 ½ in. and larger	27

On above bolts and nuts, excepting plow bolts, additional allowances of 15 pct for full container quantities. There is an additional 5 pct allowance for carload shipments.

## Semifinished Hexagon Nuts

	USS	SAE
7/16 in. and smaller	41	
¾ in. and smaller	38	
¾ in. through 1 in.	39	
9/16 in. through 1 in.	37	
1 ¼ in. through 1 ½ in.	35	37
1 ½ in. and larger	28	

In full case lots, 15 pct additional discount.

## Stove Bolts

Packages, nuts separate	\$61.75
In bulk	70.00

## Large Rivets

	Base per 100 lb
F.o.b. Pittsburgh, Cleveland, Chicago, Birmingham	\$6.75
F.o.b. Lebanon, Pa.	6.75

## Small Rivets

	Pct Off List
F.o.b. Pittsburgh, Cleveland, Chicago, Birmingham	48

## Cap and Set Screws

	Pct Off List
Hexagon head cap screws, coarse or fine thread, up to and incl. 1 in. x 6 in., SAE 1020, bright	46
¾ to 1 in. x 6 in., SAE (1035), heat treated	35
Milled studs	19
Flat head cap screws, listed sizes	5
Fillister head cap, listed sizes	28

## C-R SPRING STEEL

Base per pound f.o.b. mill

0.26 to 0.40 carbon	4.00¢
0.41 to 0.60 carbon	5.50¢
0.61 to 0.80 carbon	6.10¢
0.81 to 1.05 carbon	8.05¢
1.06 to 1.35 carbon	10.35¢
Worcester, add 0.30¢.	

## LAKE SUPERIOR ORES

(51.50% Fe; natural content, delivered lower lake ports)

	Per gross ton
Old range, bessemer	\$7.60
Old range, nonbessemer	7.45
Mesabi, bessemer	7.35
Mesabi, nonbessemer	7.20
High phosphorus	7.20

After Dec. 31, 1948, increases or decreases in Upper Lake freight, dock and handling charges and taxes thereon to be for the buyers' account.

# RAILS, TRACK SUPPLIES

F.o.b. mill

Standard rails, 100 lb and heavier, No. 1 quality, per 100 lb	\$3.40
Joint bars, per 100 lb	4.40
Light rails, per 100 lb	3.75

Base Price  
cents per lb

Track spikes†	5.35
Axles	5.25
Screw spikes	8.00
Tie plates	4.20
Tie plates, Pittsburgh, Torr., Calif.*	4.35
Track bolts, untreated	8.25
Track bolts, heat treated, to railroads	8.50

\* Seattle, add 30¢.  
† Kansas City, 5.60¢.

**PRODUCING POINTS**—Standard rails: Bessemer, Pa., 1; Ensley, Ala., 11; Gary, 1; Indiana Harbor, Ind., 8; Lackawanna, N. Y., 3; Minnequa, Colo., 14; Steelton, Pa., 3.

Light rails: All the above except Indiana Harbor and Steelton, plus Fairfield, Ala., 11; Johnstown, Pa., 3; Minnequa, Colo., 14.

Joint bars: Bessemer, Pa., 1; Fairfield, Ala., 11; Indiana Harbor, Ind., 8; Joliet, Ill., 1; Lackawanna, N. Y., 3; Steelton, Pa., 3; Minnequa, Colo., 14.

Track spikes: Fairfield, Ala., 11; Indiana Harbor, Ind., 8; Lebanon, Pa., 3; Minnequa, Colo., 14; Pittsburgh, 6; Chicago, 4; Struthers, Ohio, 6; Youngstown, 4.

Track bolts: Fairfield, Ala., 11; Lebanon, Pa., 3; Minnequa, Colo., 14; Pittsburgh, 77, 78.

Axles: Fairfield, Ala., 11; Gary, 1; Indiana Harbor, Ind., 79; Johnstown, Pa., 3; McKees Rocks, Pa., 1.

Tie plates: Fairfield, Ala., 11; Gary, 1; Indiana Harbor, Ind., 8; Lackawanna, N. Y., 3; Pittsburgh, Calif., 24; Pittsburgh, 4; Seattle, 62; Steelton, Pa., 3; Torrance, Calif., 24; Minnequa, Colo., 14.

## TOOL STEEL

F.o.b. mill

	W	Cr	V	Mo	Co	Base per lb
18	4	1	—	—	—	90.5¢
18	4	1	—	—	5	\$1.42
18	4	2	—	—	—	\$1.025
1.5	4	1.5	8	—	—	65¢
6	4	2	6	—	—	69.5¢
High-carbon-chromium						53¢
Oil hardened manganese						29¢
Special carbon						26.5¢
Extra carbon						22¢
Regular carbon						19¢

Warehouse prices on and east of Mississippi are 2 ½¢ per lb higher. West of Mississippi, 4 ½¢ higher.

## COKE

Furnace, beehive (f.o.b. oven)	Net Ton
Connellsville, Pa.	\$13.50 to \$14.50
Foundry, beehive (f.o.b. oven)	
Connellsville, Pa.	\$15.50 to \$16.00
Foundry, oven coke	
Buffalo, del'd	\$20.99
Chicago, f.o.b.	20.40
Detroit, f.o.b.	19.40
New England, del'd	22.00
Seaboard, N. J., f.o.b.	22.70
Philadelphia, f.o.b.	20.45
Swedeland, Pa., f.o.b.	20.40
Plainsville, Ohio, f.o.b.	20.90
Erie, del'd	\$20.35 to 21.04
Cleveland, del'd	22.63
Cincinnati, del'd	21.71
St. Paul, f.o.b.	23.50
St. Louis, del'd	21.60
Birmingham, del'd	18.75

## FLUORSPAR

Washed gravel fluorspar, f.o.b. cars, Rosiclare, Ill. Base price, per ton net: Effective CaF<sub>2</sub> content: 70% or more \$37.00 60% or less \$4.00



## STAINLESS STEELS

Base prices, in cents per pound,  
f.o.b. producing point

Product	301	302	303	304	316	321	347	410	416	430
Ingot, rerolling	12.75	13.50	15.00	14.80	22.75	18.25	20.00	11.25	13.75	11.50
Slab, billets, rerolling	17.00	18.25	20.25	19.25	30.25	24.50	26.75	15.00	18.50	15.25
Forg. discs, die blocks, rings	30.50	30.50	33.00	32.00	48.00	38.50	41.00	24.50	25.00	25.00
Gillets, forging	24.25	24.25	26.25	25.50	38.00	29.00	32.75	19.50	20.00	20.00
Bars, wire, structurals	28.50	28.50	31.00	30.00	46.00	34.00	38.50	23.00	23.50	23.50
Plates	32.00	32.00	34.00	34.00	50.50	39.50	44.00	28.00	28.50	28.50
									27.00	
Sheets	37.50	37.50	39.50	39.50	53.00	45.50	50.00	33.00	33.50	33.50
Strip, hot-rolled	24.25	25.75	30.00	27.75	46.00	34.50	38.75	21.25	28.00	21.75
Strip, cold-rolled	30.50	33.00	36.50	35.00	55.00	44.50	48.50	27.00	33.50	27.80

Numbers correspond to producers. See Key on Steel Price Page.

**STAINLESS STEEL PRODUCING POINTS—Sheets:** Midland, Pa., 17; Brackenridge, Pa., 28; Butler, Pa., 7; McKeesport, Pa., 1; Washington, Pa., 38, 39; Baltimore, 37; Middletown, Ohio, 7; Massillon, Ohio, 4; Gary, 1; Bridgeville, Pa., 59; New Castle, Ind., 55; Lockport, N. Y., 46.

**Strip:** Midland, Pa., 17; Cleveland, 2; Carnegie, Pa., 41; McKeesport, Pa., 54; Reading, Pa., 36; Washington, Pa., 38; W. Leechburg, Pa., 28; Bridgeville, Pa., 59; Detroit, 47; Massillon, Canton, Ohio, 4; Middletown, Ohio, 7; Harrison, N. J., 49; Youngstown, 48; Lockport, N. Y., 46; New Britain, Conn., 58; Sharon, 13; Butler, Pa., 7.

**Bars:** Baltimore, 7; Duquesne, Pa., 1; Munhall, Pa., 1; Reading, Pa., 36; Titusville, Pa., 59; Washington, Pa., 39; McKeesport, Pa., 1, 54; Bridgeville, Pa., 59; Dunkirk, N. Y., 28; Massillon, Ohio, 4; Chicago, 1, 67; Syracuse, N. Y., 17; Watervliet, N. Y., 28; Waukegan, Ill., 2; Lockport, N. Y., 46; Canton, Ohio, 42.

**Wire:** Waukegan, Ill., 2; Massillon, Ohio, 4; McKeesport, Pa., 54; Bridgeport, Conn., 44; Chicago, 67; Trenton, N. J., 45; Harrison, N. J., 80; Baltimore, 7; Dunkirk, 28.

**Structurals:** Baltimore, 7; Massillon, Ohio, 4; Chicago, 1, 67; Watervliet, N. Y., 28; Bridgeport, Conn., 44.

**Plates:** Brackenridge, Pa., 28; Butler, Pa., 7; Chicago, 1; Munhall, Pa., 1; Midland, Pa., 17; New Castle, Ind., 55; Lockport, N. Y., 46; Middletown, 7; Washington, Pa., 39; Cleveland, Massillon, 4.

**Forged discs, die blocks, rings:** Pittsburgh, 1, 17; Syracuse, 17; Ferndale, Mich., 28.

**Forging billets:** Midland, Pa., 17; Baltimore, 7; Washington, Pa., 39; McKeesport, 54; Massillon, Canton, Ohio, 4; Watervliet, 28; Pittsburgh, Chicago, 1.

## REFRACTORIES (F.o.b. works)

## Fire Clay Brick Carloads, Per 1000

First quality, Ill., Ky., Md., Mo., Ohio, Pa. (except Salina, Pa., add \$5)	\$30.00
No. 1 Ohio	74.00
Sec. quality, Pa., Md., Ky., Mo., Ill.	74.00
No. 2 Ohio	66.00
Ground fire clay, net ton, bulk (except Salina, Pa., add \$1.50)	11.50

## Silica Brick

Mt. Union, Pa., Ensley, Ala.	\$30.00
Childs, Pa.	34.00
Hays, Pa.	35.00
Chicago District	39.00
Western, Utah and Calif.	95.00
Super Duty, Hays, Pa., Athens, Tex.	\$35.00 to 95.00
Silica cement, net ton, bulk, Eastern (except Hays, Pa.)	\$13.75 to 14.00
Silica cement, net ton, bulk, Hays, Pa.	16.00
Silica cement, net ton, bulk, Ensley, Ala.	15.00
Silica cement, net ton, bulk, Chicago District	\$14.75 to 15.00
Silica cement, net ton, bulk, Utah and Calif.	21.00

## Chrome Brick

Standard chemically bonded, Balt., Chester	Per Net Ton \$69.00
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## Magnesite Brick

Standard, Baltimore	\$91.00
Chemically bonded, Baltimore	80.00

## Grain Magnesite

Std. %-in. grains	
Domestic, f.o.b. Baltimore, in bulk, fines removed	\$56.00 to \$56.50
Domestic, f.o.b. Chewelah, Wash., in bulk with fines	30.50 to 31.00
in sacks with fines	35.00 to 35.50

## Dead Burned Dolomite

F.o.b. producing points in Pennsylvania, West Virginia and Ohio, per net ton, bulk, Midwest, add 10¢; Missouri Valley, add 20¢	\$12.25
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## METAL POWDERS

Per pound, f.o.b. shipping point, in ton lots, for minus 100 mesh	
Swedish sponge iron c.i.f.	
New York, ocean bags	7.4¢ to 9.0¢

Domestic sponge iron, 98+%	
Fe, carload lots	9.0¢ to 15.0¢
Electrolytic iron, annealed, 99.5+%	31.5¢ to 39.5¢
Electrolytic iron unannealed, minus 325 mesh, 99+%	48.5¢
Hydrogen reduced iron, minus 300 mesh, 98+%	63.0¢ to 80.0¢
Carbonyl iron, size 6 to 10 microns, 98%	90.0¢ to \$1.75
Aluminum	29.00¢
Antimony	45.78¢
Brass, 10 ton lots	22.75¢ to 25.75¢
Copper, electrolytic	28.625¢
Copper, reduced	28.50¢
Cadmium	\$2.40
Chromium, electrolytic, 99% min.	\$3.50
Lead	19.02¢
Manganese	55.00¢
Molybdenum, 99%	\$2.65
Nickel, unannealed	61.00¢
Nickel, spherical, minus 30 mesh, unannealed	68.00¢
Silicon	34.00¢
Solder powder	8.5¢ plus metal cost
Stainless steel, 302	75.00¢
Tin	96.00¢
Tungsten, 99%	\$2.90
Zinc, 10 ton lots	15.50¢ to 18.25¢

## ELECTRODES

Cents per lb, f.o.b. plant, threaded electrodes with nipples, unboxed

Diam. in in.	Length in in.	Cents Per lb
GRAPHITE		
17, 18, 20	60, 72	16.00¢
8 to 16	48, 60, 72	16.50¢
7	48, 60	17.75¢
6	48, 60	19.00¢
4, 5	40	19.50¢
3	40	20.50¢
2 1/2	24, 30	21.00¢
2	24, 30	23.00¢
CARBON		
47	100, 110	7.50¢
35	65, 110	7.50¢
30	65, 84, 110	7.50¢
24	72 to 104	7.50¢
17 to 20	84, 90	7.50¢
14	60, 72	8.00¢
10, 12	60	8.25¢
8	60	8.50¢

## PIPE AND TUBING

Base discounts, f.o.b. mills  
Base price, about \$200.00 per net ton

## Standard, T &amp; C

Steel, butt weld*	Black	Galv
1/2-in.	40 1/2 to 38 1/2	24 to 22
3/4-in.	43 1/2 to 41 1/2	28 to 26
1-in.	46 to 44	31 to 29
1 1/4-in.	46 1/2 to 44 1/2	31 1/2 to 29 1/2
1 1/2-in.	47 to 45	32 to 30
2-in.	47 1/2 to 45 1/2	32 1/2 to 30 1/2
2 1/2 to 3-in.	48 to 46	33 to 31

## Steel, lap weld

2-in.	37	23 1/2 to 21 1/2
2 1/2 to 3-in.	41 to 40	25 1/2 to 24 1/2
3 1/2 to 6-in.	44 to 40	28 1/2 to 24 1/2

## Steel, seamless

2-in.	36	20 1/2
2 1/2 to 3-in.	39	23 1/2
3 1/2 to 6-in.	41	25 1/2

## Wrought iron, butt weld

1/2-in.	+20 1/2	+47
3/4-in.	+10 1/2	+36
1 & 1 1/4 in.	+4 1/2	+27
2-in.	+1 1/2	+23 1/2
3-in.	— 2	+23

## Wrought iron, lap weld

2-in.	+7 1/2	+31
2 1/2 to 3 1/4-in.	+5	+26 1/2
4-in.	list	+20 1/2
4 1/2 to 8-in.	+3	+23

## Extra Strong, Plain Ends

## Steel, butt weld

1/2-in.	39 1/2 to 37 1/2	24 1/2 to 22 1/2
3/4-in.	43 1/2 to 41 1/2	28 1/2 to 26 1/2
1-in.	45 1/2 to 43 1/2	31 1/2 to 29 1/2
1 1/4-in.	46 to 44	32 to 30
1 1/2-in.	46 1/2 to 44 1/2	32 1/2 to 30 1/2
2-in.	47 to 45	33 to 32
2 1/2 to 3-in.	47 1/2 to 45 1/2	33 1/2 to 31 1/2

## Steel, lap weld

2-in.	37 to 36	22 1/2 to 21 1/2
2 1/2 to 3-in.	42 to 40	27 1/2 to 25 1/2
3 1/2 to 6-in.	45 1/2 to 41 1/2	31 to 29

## Steel, seamless

2-in.	35	20 1/2
2 1/2 to 3-in.	39	24 1/2
3 1/2 to 6-in.	42 1/2	28

## Wrought iron, butt weld

1/2-in.	+16	+40
3/4-in.	+9 1/2	+34
1 to 2-in.	— 1 1/2	+23

## Wrought iron, lap weld

2-in.	+4 1/2	+27 1/2
2 1/2 to 4-in.	— 5	+16
4 1/2 to 6-in.	1	+20 1/2

For threads only, butt weld, lap weld and seamless pipe, one point higher discount (lower price) applies. For plain ends, butt weld, lap weld and seamless pipe 3-in. and smaller, three points higher discount (lower price) applies, while for lap weld and seamless 3 1/2-in. and larger four points higher discount (lower price) applies. On butt weld and lap weld steel pipe, jobbers are granted a discount of 5 pct. \*Fontana, Calif., deduct 11 points from figures in left columns.

## BOILER TUBES

Seamless steel and electric welded commercial boiler tubes and locomotive tubes, minimum wall. Prices per 100 ft at mill in carload lots, cut length 4 to 24 ft inclusive.

OD in.	Gage BWG	Seamless H.R.	Seamless C.R.	Electric H.R.	Weld* C.D.
2	13	\$20.61	\$24.24	\$18.60	\$21.89
2 1/2	12	27.71	32.58	25.02	29.41
3	12	30.82	36.27	27.82	32.74
3 1/2	11	38.52	45.38	34.78	40.94
4	10	47.82	56.25	43.17	50.78

\* New prices not yet announced.

## CAST IRON WATER PIPE

	Per net ton
6 to 20-in., del'd Chicago	\$95.70
6 to 24-in., del'd N. Y.	\$92.50 to 97.40
6 to 24-in., Birmingham	82.50
6-in. and larger, f.o.b. cars, San Francisco, Los Angeles, for all rail shipment; rail and water shipment less	109.30
Class "A" and gas pipe, \$5 extra; 4-in. pipe is \$5 a ton above 6-in.	

# IRON AGE FOUNDED 1855

These prices do not reflect latest price increases.

## WAREHOUSE PRICES

Base prices, f.o.b. warehouse, dollars per 100 lb.  
(Metropolitan area delivery, add 15c to base price except Cincinnati and New Orleans (\*), add 10c; New York, Chicago and Boston, add 20c).

CITIES	SHEETS			STRIP		PLATES	SHAPES	BARS		ALLOY BARS			
	Hot-Rolled	Cold-Rolled (15 gage)	Galvanized (10 gage)	Hot-Rolled	Cold-Rolled			Hot-Rolled	Cold-Finished	Hot-Rolled, A 4615 As-rolled	Hot-Rolled, A 4140-50 Ann.	Cold-Drawn, A 4615 As-rolled	Cold-Drawn, A 4140-50 Ann.
Baltimore	5.31	6.21-6.41	6.95-7.11	5.37	....	5.56	5.36	5.42	6.16	....	9.00-10.10	....	....
Birmingham	4.85	5.75	6.15	4.85	....	5.10	4.90	4.90	6.59	....	....	....	....
Boston	5.55	6.45-6.75	7.11-7.61	5.60	6.75	5.75	5.42	5.52	6.02	9.36-9.67	9.67	10.72	11.02
Buffalo	4.85	5.75	7.42-7.57	5.24	7.27	5.35	5.00	4.95	5.40	9.30	9.60	10.65	10.95
Chicago	4.85	5.75	6.85	4.85	5.45	5.10	4.90	4.90	5.40	8.90	9.20	10.25	10.55
Cincinnati*	5.16-5.51	5.84-6.28	6.59-6.93	5.29-5.43	....	5.53-5.55	5.33	5.33-5.45	6.08-6.20	9.74	9.99	11.19	11.44
Cleveland	4.85	5.75	6.70	5.03	....	5.21	5.01	5.01	5.45	9.05	9.35	10.40	10.70
Detroit	5.25-5.32	6.07-6.18	7.38-7.58	5.27-5.47	6.27-6.58	5.52-5.57	5.33-5.40	5.33-5.55	6.00-6.10	9.67	9.92	11.11	11.35
Houston	6.70	6.70	7.30	6.70	....	6.70	6.20	6.40	7.00	10.45	10.40	11.45	11.70
Indianapolis	6.95	5.29	8.13	7.44	5.29	7.38	5.54	5.34	6.14	11.25	11.39	....	....
Kansas City	5.50	6.40	7.50	5.50	6.95	5.75	5.55	5.55	6.10	5.55	8.85	10.90	11.20
Los Angeles	5.45 <sup>17</sup>	7.00	7.40 <sup>17</sup>	5.95 <sup>17</sup>	7.35 <sup>17</sup>	5.50 <sup>17</sup>	5.45 <sup>17</sup>	5.60 <sup>17</sup>	7.25 <sup>17</sup>	9.55 <sup>21</sup>	9.75 <sup>21</sup>	10.95 <sup>21</sup>	11.35 <sup>21</sup>
Memphis	5.75	6.60	7.20	5.80-5.95	6.00	5.95	5.75	5.75	6.53	....	....	....	....
Milwaukee	5.80	5.03	7.02	5.03-5.38	6.32	5.28	5.08	5.08	5.63	9.08	9.38	10.43	10.73
New Orleans*	5.95	6.75	....	6.15	....	6.15	5.95	5.95	6.65	....	....	....	....
New York	5.40	6.31	6.85-6.90	5.62	6.76	5.85	5.33	5.57	6.31	9.28	9.58	10.63	10.93
Norfolk	6.00	....	....	6.20	....	6.05	6.05	6.05	7.05	....	....	....	....
Omaha	6.13	....	8.33	6.13	....	6.38	6.18	6.18	6.98	....	....	....	....
Philadelphia	4.95	6.24 <sup>13</sup>	6.63	5.40	6.29	5.35	5.10	5.40	5.96	9.05	9.35	10.62	10.87
Pittsburgh	4.85	5.75	6.90	5.00	6.00	5.05	4.90	4.90	5.40	8.90	9.20	10.25	10.55
Portland	6.50 <sup>8</sup>	8.00	8.80-9.10	6.85 <sup>8</sup>	....	6.30 <sup>8</sup>	6.35 <sup>8</sup>	6.35 <sup>8</sup>	8.25 <sup>14</sup>	10.50 <sup>8</sup>	10.10 <sup>8</sup>	....	....
Salt Lake City	7.05	7.05	8.65	7.45 <sup>3</sup>	....	5.65 <sup>3</sup>	5.50 <sup>3</sup>	7.10 <sup>8</sup>	8.15	....	....	....	....
San Francisco	6.15 <sup>8</sup>	7.50 <sup>2</sup>	7.60	6.75 <sup>8</sup>	8.25 <sup>8</sup>	6.35 <sup>8</sup>	5.90 <sup>8</sup>	5.90 <sup>8</sup>	7.55	9.80	10.00	11.20	11.60
Seattle	6.70 <sup>4</sup>	8.15 <sup>2</sup>	8.80	6.70 <sup>4</sup>	....	6.35 <sup>4</sup>	6.30 <sup>4</sup>	6.20 <sup>4</sup>	8.15 <sup>14</sup>	....	10.35 <sup>15</sup>	....	13.10 <sup>1</sup>
St. Louis	5.22-5.37	6.12-6.27	7.32	5.22	6.68-7.54	5.47	5.27	5.27	5.82	9.27-9.72	9.57-9.77	10.62-11.17	10.92-11.42
St. Paul	5.44	6.19-6.34	7.54-7.64	5.44	6.82	5.64-6.69	5.49	5.49	6.04	9.49	9.79	10.84	11.14

BASE QUANTITIES Standard unless otherwise keyed on prices.

### Hot-Rolled:

Sheets, strip, plates, shapes and bars, 400 to 1999 lb.

### Cold-Rolled:

Sheets, 400 to 1499 lb strip, extras on all quantities. Bars 1000 lb and over.

### Alloy Bars:

1000 to 1999 lb.

### Galvanized Sheets:

450 to 1499 lb.

### Exceptions:

(1) 400 to 1499 lb; (2) 450 to 1499 lb; (3) 300 to 4999 lb; (4) 300 to 9999 lb; (5) 2000 lb and over; (6) 1000 lb and over; (7) 400 to 1499 lb; (8) 400 lb and over; (9) 500 to 1999 lb; (10) 500 to 999 lb; (11) 400 to 3999 lb; (12) 450 to 3749 lb; (13) 400 to 1999 lb; (14) 1500 lb and over; (15) 1000 to 4999 lb; (16) 4000 lb and over; (17) up to 1999 lb; (18) 1000 to 1499 lb; (19) 1500 to 3499 lb; (20) 6000 lb and over; (21) 2000 to 3999 lb.

## PIG IRON PRICES

Dollars per gross ton. Delivered prices do not include 3 pct tax on freight.

PRODUCING POINT PRICES						DELIVERED PRICES (BASE GRADES)							
Producing Point	Basic	No. 2 Foundry	Malleable	Bessemer	Low Phos.	Consuming Point	Producing Point	Rail Freight Rate	Basic	No. 2 Foundry	Malleable	Bessemer	Low Phos.
Bethlehem	48.00	48.50	49.90	49.50		Boston	Everett	\$0.50 Arb.		50.50	51.00		
Birmingham	38.88	39.38				Boston	Steelton	6.90					60.90
Buffalo	46.00	46.50	47.00			Brooklyn	Bethlehem	4.29		52.79	53.29	53.79	
Chicago	46.00	46.50	46.50	47.00		Cincinnati	Birmingham	6.70	45.58	46.08			
Cleveland	46.00	46.50	46.50	47.00	51.00	Jersey City	Bethlehem	2.63		51.13	51.63	52.13	
Duluth	46.00	46.50	46.50	47.00		Los Angeles	Geneva-Ironton	7.70	53.70	54.20			
Erie	46.00	46.50	46.50	47.00		Mansfield	Cleveland-Toledo	3.33	49.33	49.83	49.83	50.33	54.33
Everett		50.50	51.00			Philadelphia	Bethlehem	2.39	50.39	50.89	51.39	51.89	
Granite City	47.90	48.40	48.90			Philadelphia	Swedeland	1.44	49.44	49.94	50.44	50.94	
Ironton, Utah	46.00	46.50				Philadelphia	Steelton	3.09					57.00
Pittsburgh	46.00	46.50	46.50	47.00		Rochester	Buffalo	2.63	48.63	49.13	49.63		
Geneva, Utah	46.00	46.50				San Francisco	Geneva-Ironton	7.70	53.70	54.20			
Sharpsville	46.00	46.50	46.50	47.00		Seattle	Geneva-Ironton	7.70	53.70	54.20			
Steelton	48.00	48.50	49.00	49.50	54.00	St. Louis	Granite City	0.75 Arb.	48.65	49.15	49.65		
Struthers, Ohio	46.00					Syracuse	Buffalo	3.58	49.58	50.08	50.58		
Swedeland	46.00	46.50	49.00	49.50									
Toledo	46.00	46.50	46.50	47.00									
Troy, N. Y.	48.00	48.50	49.00		54.00								
Youngstown	46.00	46.60	46.50	47.00									

Producing point prices are subject to switching charges; silicon differential (not to exceed 50c per ton for each 0.25 pct silicon content in excess of base grade which is 1.75 to 2.25 pct for foundry iron); phosphorus differentials, a reduction of 35c per ton for phosphorus content of 0.70 pct and over manganese differentials, a charge not to exceed 50c per ton for each 0.50 pct manganese

content in excess of 1.00 pct. \$2 per ton extra may be charged for 0.5 to 0.75 pct nickel content and \$1 per ton extra for each additional 0.25 pct nickel.

Silvery iron (blast furnace) silicon 6.01 to 6.50 pct. C/L per g.t., f.o.b. Jackson, Ohio—\$59.50; f.o.b. Buffalo, \$60.75. Add \$1.00 per ton for each additional 0.50 pct Si up to 17 pct.

Add 50c per ton for each 0.50 pct Mn over 1.00 pct. Add \$1.00 per ton for 0.75 pct or more P. Bessemer ferro-silicon prices are \$1.00 per ton above silvery iron prices of comparable analysis.

Charcoal pig iron base price for low phosphorus \$60.00 per gross ton, f.o.b. Lyle, Tenn. Delivered Chicago, \$68.56. High phosphorus charcoal pig iron is not being produced.

## Iron Age Introduces

Continued from Page 21

Leo A. Kraemer has been named operations engineer for the Engineering and Construction Div. of KOPPERS CO., INC., Pittsburgh. Mr. Kraemer was formerly superintendent of the By-Product Coke Div.

Charles L. Waterhouse has been appointed manager of the styling department and Henry C. Grebe, former body engineer, has been made chief body engineer of the FORD MOTOR CO., Dearborn. Mr. Waterhouse had been serving as body engineer for the Lincoln-Mercury department. Mr.



HENRY C. GREBE, chief body engineer, Engineering Div., Ford Motor Co.

Grebe joined Ford in 1947, coming from G. M.'s Fisher Body Div. where he was assistant chief body engineer prior to the war. Thomas H. Holden has been made assistant manager of the truck and fleet sales department, Ford Div. and John F. McLean, Jr. has been made manager of truck sales section.

### OBITUARIES

George E. Hirst, 54, treasurer Hamilton Steel Co., Cleveland, died Dec. 8.

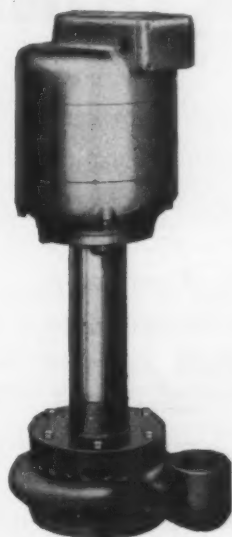
William E. Brewster, 60, retired manager of operations of the Wisconsin Steel Div. of International Harvester Co., died Dec. 19.

Resume Your Reading on Page 22

December 29, 1949



Illustrated is a Sibley model C-20 Drilling machine equipped with model I-P3-9030 Short 1/10 HP Ruthman Gusher Coolant Pump.



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Photo Courtesy of Sibley Machine & Foundry Corp.

**THE RUTHMAN MACHINERY CO.**

1821 READING ROAD

CINCINNATI, OHIO





**KEYSTONE**  
"SPECIAL PROCESSED"  
**COLD HEADING WIRE**

**PROLONGS DIE LIFE**  
**FEWER REJECTIONS**  
**REDUCES INSPECTIONS**

For recessed heads, Keystone's new special-process wire delivers the desired upsetting and die forming qualities with such a high degree of uniformity that finished product rejections are practically eliminated . . . individual inspection of screws is no longer necessary . . . die and plug life are often more than doubled. This new wire effects considerable savings in the production of Phillips head, clutch head and cross recessed head screws.

Keystone is prepared to help solve any of your industrial wire problems. If special treatment is called for, Keystone's metallurgical research and testing facilities are available to supply the answers. We welcome your inquiry.

**KEYSTONE**  
**STEEL & WIRE CO.**  
PEORIA . . . ILLINOIS

*Special Analysis Wire, Setting  
New Standards of Performance*

## FATIGUE CRACKS

*Continued from Page 18*

better watch your language when they're around.

### Jam

Ray Kay, your favorite family journal's West Coast buzz-saw, tells us that Stanley Plumb comes close to being in a jam by working for the Cling Peach Advisory Board.

### And Elderly

Your f.f.j. receives letters written in every language on earth except Swahili, and that's probably not a written language.

This keeps us busy with a collection of foreign dictionaries too much of the time, and consequently it's a great relief when our friends across the water make the effort to write in English.

A letter from Caccaro Marco of Giovinazzo, Italy, stopped us cold, though, before we got beyond the salutation. He addressed us as "Respectable Iron Age."

Possibly we're too sensitive about it, but the very fact your f.f.j. is called respectable seems to imply that some people might have the idea it wasn't. Now that it's rounding out its 95th year the idea of being scandalous is—well, scandalous.

### Puzzler

After inflicting the story of the hunter who sallied forth from the North Pole to shoot a polar bear (a white one, naturally), we'll let you figure out how to use the same digit 8 times and produce 1000.

Replies are still rolling in from the Dec. 8 puzzler on little Charlie's marbles. Some readers even imply he didn't have them all.

*Resume Your Reading on Page 19*

## Ships Million Tons of Steel

Middleton, Ohio—More than one million tons of steel have been shipped from the East Works plant of Armco Steel Corp. so far this year.

L. F. Reinartz, manager of the Middleton Div., in making the announcement said the million-ton figure was substantially greater than the old record which was established last year. And the record will be much higher than this, since a lot more steel will be shipped during the remaining days of the year.

THE IRON AGE



**B**uying metal cleaners on a trial-and-error basis is a costly process. The way to be sure of full value, when you buy, is to base your choice of products on the experience and reputation of the manufacturer.

Wyandotte Metal Cleaners are made by the world's largest producer of specialized cleaning compounds. In the complete Wyandotte line are cleaners for any soak, electrolytic, spray or tumble operation, as well as degreasing, paint stripping, burnishing and burring compounds.

Each Wyandotte formula is the result of extensive laboratory and

field research and is based on 59 years' experience in chemicals; each product must meet the most exacting performance specifications.

No matter what your cleaning needs may be, your nearest Wyandotte Representative will be glad to fill them. In addition, if you are confronted with some special cleaning problem, Wyandotte's skilled technical service staff stands ready to help you.

**Wyandotte Chemicals Corporation**  
 WYANDOTTE, MICHIGAN  
 SERVICE REPRESENTATIVES IN 88 CITIES



# FREE

## PUBLICATIONS

*Continued from Page 28*

and machine life extended, along with the necessary applications of the Trico line of automatic oilers, are listed in 4-p. catalog. *Trico Fuse Mfg. Co. For more information, check No. 11 on the postcard on p. 29.*

### Centrifugal Fire Pumps

Centrifugal fire pumps together with selection charts, necessary fittings, and application data are described in 24-p. illustrated bulletin. *Peerless Pump Div., Food Machinery & Chemical Corp. For more information, check No. 12 on the postcard on p. 29.*

### Precision Brake

The Di-Acco precision brake claimed to perform all the functions of a box and pan brake, bar folder, and standard brake in addition to its remarkable ability of replacing dies for many duplicating operations is described in 4-p. illustrated catalog. *O'Neil-Irwin Mfg. Co. For more information, check No. 13 on the postcard on p. 29.*

### Gas Pumps

Type XA gas pumps used as boosters or exhausters in industrial and other applications are described and illustrated in 8-p. bulletin. *Roots-Connersville Blower Corp. For more information, check No. 14 on the postcard on p. 29.*

### Sheet Copper Roofing

"Master Specifications for Copper Roofing and Sheet Metal Work in Building Construction," prepared as a specification guide for architects, sheet metal contractors, and others using sheet metal in building construction, is available in 23-p. brochure form. *Revere Copper & Brass Inc. For more information, check No. 15 on the postcard on p. 29.*

**Resume Your Reading on Page 29**

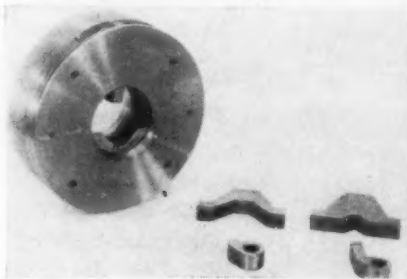


# NEW

## PRODUCTION IDEAS

Continued from Page 30

driving surface is permissible. When the spindle is started, a lever arm actuated jaw clamps the work so that the heavier the cut, the



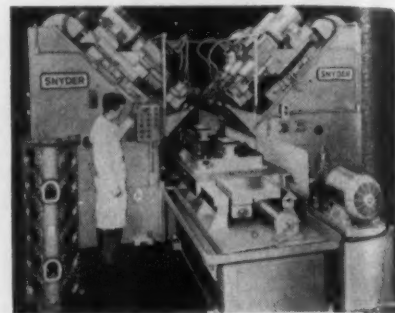
harder the driver pulls. Two sets of standard jaws have capacities of 1 to 2 1/4 in. and 2 1/4 to 3 1/2 in. Various sets of jaws are inter-

changeable in the body. *Monarch Machine Tool Co. For more information, check No. 23 on the postcard on p. 29.*

### Special Purpose Machine

Greater efficiency in processing large aluminum crankcases is achieved with a new special-purpose, 11-station, line index, 90° V-type hydraulic feed machine. The machine is entirely automatic after loading and can be satisfactorily operated by unskilled help. Guide plates establish accurate positioning and clamping is manual. Angular, welded steel columns on each side each carry two counterweighted Snyder standard units, with 14-spindle heads. The columns also carry two tapping units with two 14-spindle, individual lead screw tapping heads. Workpieces are automatically moved through the eleven indexes required. A total of 168 cylinder stud holes are drilled, counterbored and tapped at a 90° angle with high speed steel tools hydraulically fed into the work. Power

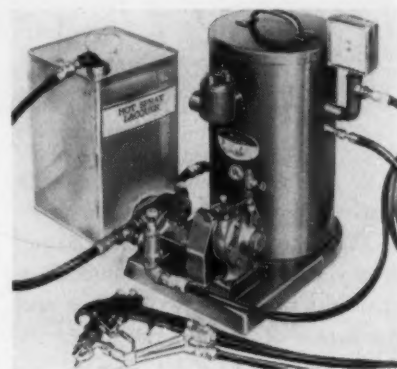
is supplied by three 7 1/2 hp motors at 1200 rpm; two 7 1/2 hp motors and two 5 hp motors at 1800 rpm. Time cycle is 2 min, 19 sec, without load-



ing and unloading time. *Snyder Tool & Engineering Co. For more information, check No. 24 on the postcard on p. 29.*

### Paint Heater

A new circulating type paint heater can spray directly from the paint container without the use of a pressure tank. Paint is pumped through the circulating heater directly from the paint container by a circulating pump especially designed for hot spray, that also circulates paint from the heater to the spray gun and return.



Paint is heated to any desired temperature, generally to 180°F, to obtain better quality paint films with fewer rejects, and to cut paint, thinner and labor costs. Paint pressure and temperature are adjustable. The fluid pump is gear-driven by a 1/2 hp explosion-proof air motor. *Bede Products Inc. For more information, check No. 25 on the postcard on p. 29.*

Resume Your Reading on Page 31

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your gear  
department—**

Heavy pitch  
gears for con-  
struction equip-  
ment.

You can very frequently obtain quality gears and gear assemblies at a saving over present cost.

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# Dear Editor

## PRICE QUOTATIONS

We feel that your scrap quotations for the Detroit area, as listed in your November 24 edition of THE IRON AGE are nothing more than wishful thinking and do not indicate the true market prices now being quoted by Detroit brokers. Inasmuch as we and numerous other scrap concerns base our buying prices on these quotations we would certainly appreciate a little more accuracy on the part of your magazine.

MYER FRANKLIN  
Sec'y.-Treas.

Jackson Iron & Metal Co.  
Jackson, Mich.

Our quotations are based on a careful appraisal of the market. We have no interest whatsoever as to whether the price goes up or down; our sole objective is to quote the most accurate price determinable from as much factual information as we can find.—Ed.

## VIRUS EDITORIAL

May I congratulate you on your editorial of November 1. The virus referred to has long been active in Washington.

ROBERT L. GIEBEL  
President

Giebel, Inc.  
New York

## PLATE ROLLER LEVELER

Can you give us the name of any plant in the vicinity of New York City which is equipped with a plate roller leveler, having sufficient capacity to level steel plates  $\frac{3}{4}$  in. thick?

J. A. SMITH

Smith-Stewart Co.  
Newburgh, N. Y.

Readers having any information on this may contact Mr. Smith at 223 Broadway, Newburgh, N. Y. Telephone 4880.—Ed.

## STEEL CONSUMPTION

Your recent publication entitled "Steel Consumption in 1948" has come to our attention. This is the type of material which we are using in connection with our courses in the intensive business training program at City College. If copies are still available for distribution we would appreciate it if you would send us a copy so that we may have it available for use by our instructors and students.

ISABEL M. CUBBERLEY  
Librarian

City College  
New York

We are always glad to foster greater familiarity with the industry; a copy has been sent.—Ed.

## ELECTROFORMING

Some time ago your publication carried a feature on electroforming of ornamental and other items. We are very much interested in contacting a company whose techniques in this field are most advanced. Would you please furnish us with the address of such a company.

JAMES L. ROWE  
Division Leader

Sandia Corp.  
Albuquerque, N. M.

The article to which you refer, "Production Electroforming," April 1, 1948, page 72, dealt with the production of electroformed articles by Camin Laboratories, Inc., 352-4th Ave., New York.—Ed.

## IRON POWDER

I read with interest your short article on the domestic iron powder industry, under "News of Industry" in the Nov. 3 issue. During the past few months I have been trying to find a market for several tons of cast iron powder, which accumulates in our foundry. I know there are a number of different uses for iron powder, but do not know what specifications the powder must meet. Do you have any information on specifications or possible use for this material?

WM. J. MANCHESTER  
Purchasing Agent

Union Mfg. Co.  
New Britain, Conn.

While you are not specific about the origin of the powder, we assume that it is the usual borings and turnings that accumulate from machining operations or castings. This scrap is normally handled by the scrap industry as clean cast chemical borings. According to the specifications of the Institute of Scrap Iron and Steel Inc., and the Office of Price Administration, specifications for cast iron borings read as follows: "Clean cast iron or malleable iron borings of drillings, free of steel turnings, scale, lumps and excessive oil." To market this material we suggest that you consult with your usual scrap dealer.—Ed.

## HEATLESS PROCESS

In one of your recent issues of THE IRON AGE you had an article on heatless process. From this article we understand that the Koldweld Corp., New York, is being licensed to market this process in this country. We would appreciate your giving us the address of this company.

E. MILLHOUSE  
Auto Specialties Mfg. Co., Inc.  
St. Joseph, Mo.

The address of Koldweld Corp. is 10 E. 40th St., New York.—Ed.

## COLD ROLL FORMING

The Nov. 3 issue of THE IRON AGE carried an article on p. 83 entitled "Designing Tools for Cold Roll Forming," by R. T. Engel. This article is of great interest to us in our work. Would you please forward to me three sets of tear sheets.

E. P. WHITE  
Head Highway Transportation Section  
Development Div.  
Aluminum Co. of America  
New Kensington, Pa.

Copies have been sent.—Ed.

## AIRCRAFT QUALITY Alloy Steels

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FROM OUR CHICAGO  
WAREHOUSE.

## SPECIFICATIONS

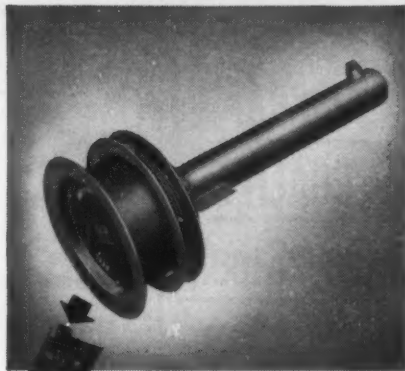
AMS 6260  
AMS 6270  
AMS 6272  
AMS 6280  
AN-S-14A  
AMS 6324  
AMS 6415  
AN-QQ-756A  
AMS 6320 (Hex)

ROUNDS—HEXAGONS  
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**RUD-O-MATIC  
MAGNET REEL-TAGLINE  
COMBINATION**

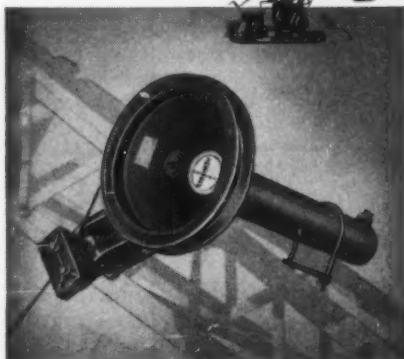
Rud-o-Matic Combination Magnet Reel-Tagline saves costly electric cable on overhead and boom crane magnet pick-up jobs. Steel tagline cable takes the load. Protective slack is maintained on electric cable. Models to fit your need.

**Boom Crane or  
Overhead Crane  
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or Magnet Pick-Up**

**RUD-O-MATIC  
TAGLINE CONTROL**  
is your  
answer!

**RUD-O-MATIC TAGLINE**

holds the bucket steady at any angle of the boom. Heavy duty torsion coil spring assures constant tension at all times, at any length of cable run-out. Easily installed. Interchangeable for use on equipment of similar size. 8 models for various bucket sizes.



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# Dear Customer

by *Jack R. Hight*

**JUST BROWSING**—With absolutely nothing better to do, we have been sitting with our feet up on the stove here in New York, leaning on the cracker barrel, listening to our editors spin yarns about the mystical ways that they get stories. Like everyone else, they're inclined to mourn the passing of the "old days," and to lament that the business has become much too pat in recent years. The channels of news spreading today are relatively well developed, and take a lot of the journeying out of journalism.

They pointed out the frequency of our stories today on various developments in continuous casting as an example of what they were talking about. Ten years ago, when *THE IRON AGE* carried its first comprehensive article on this subject, there were real thrills involved. Everyone who was trying to pour billets or slabs direct from the molten metal was keeping his mouth shut about it. There was real sleuthing involved in getting those first exclusive articles. It took 4 years between articles to get together enough new material to merit another roundup of the status of the development work.

When the editors wheedled and cajoled, borrowed and stole enough material for the second such article in 1944 on the same subject, the scoop was so electrifying that

the Russians liberated the photos to lay claim to the process for their very own. But it took 4 more years of enterprise to get the next article, the first real discussion of the continuous casting of steel.

Since then there have been four more articles, winding up with the brilliant Bristol Brass and Scovill Mfg. Co. articles of recent weeks in the short space of 18 months. But according to the editors, the whole story isn't shown in the printed page. There are files of notes on foreign practice, careful tabulations of every known installation in the world, ideas that have not yet developed into new installations (these will be *THE IRON AGE* articles of 1950, and '51 and '52).

But they didn't quite convince us with the idea that all the romance and skulduggery is gone. On one yellow sheet we saw a pencil sketch that looked to us like Phi Bete — doodles to us — but they warned us of even talking about that. That, they said, was a sketch of a plant, but they were smuggled in to see it, and they weren't ready to let the word seep out as yet.

They would prefer to talk about the galley proofs of articles that almost but not quite made the grade, and the conflicts between patent lawyers, and inventors and the satisfaction that comes from carrying a series of exclusive articles.



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The few perforations illustrated are indicative of the wide variety of our line—we can perforate almost any size perforation in any kind of metal or material required. Send us your specifications.

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## LATEST TYPE—Nearly New

### MACHINE TOOLS

**BORING MILLS—Horizontal**  
CINCINNATI GILBERT 3 1/2" bar, floor type, latest  
LUCAS #41, 3" bar, Table Type, "Precision", latest  
LUCAS #43, 5" bar, Table Type, "Precision", M.D.  
NILES-BEMENT-POND 5", 4" bar, Floor type, M.D.  
UNIVERSAL 3" bar, high speed, latest type

**BORING MILLS—Vertical**  
BULLARD 12" and 16", 6 spindle Multi-Au-Matic  
Type D, single or double spindle, latest type  
BULLARD 24", 36", 42" "Spiral Drive", latest type  
COLBURN 72", 2 swivel heads, Rapid Traverse, M.D.  
KING 62", 2 swivel heads, Rapid Traverse, M.D.  
NILES 100", 2 swivel heads, PRT, D.C., Motor Dr.

**DRILLS—Miscellaneous**  
AMERICAN 4" arm 11" col., "Hole Wizard", latest  
LELAND & GIFFORD #2 LMS 6 spindle, latest  
NATCO 4 AL 30 spindle, Multiple, latest type  
PRATT & WHITNEY 18x50" Deep Hole, latest

**GEAR CUTTING EQUIPMENT**  
FELLOWS 61A, #61, #7, #7A, #72, #72S, #77,  
#7Z, #622, High Speed Gear Shapers, latest type  
GLEASON 3", 12" straight bevel generator, latest  
GLEASON 24", 77", 96", Bevel Gear Planer, Motor Dr.  
GOULD & EBERHARDT 12H, 96H, Hobber, m.d.

**GRINDERS—Cyl.—Plain & Univ.**  
BROWN & SHARPE #1, 2, 3, 4, Universal, latest  
BROWN & SHARPE #13 Univ. Cutter & Tool, latest  
LANDIS #12, Type B, Plain Hyd., latest type  
NORTON 6"x18", 10"x36", 10"x72", 14"x36", Type C  
Plain, latest type

**GRINDERS—Miscellaneous**  
BARBER COLMAN #3, 4 hob sharpener, latest type  
CINCINNATI #2, #4 Centerless "Filmatic", latest  
HEALD 75A, 72A3, 72A5, 74, Internal, latest type  
LANDIS #12 Centerless, Hydraulic, latest type

**GRINDERS—Surface**  
BLANCHARD #11, 16" Mag. chuck, latest type  
BANCHETT Series 300, 12"x48" Vert. Sp. Hy., latest  
BANCHETT #36 Vert. 36" Mag. Chuck, latest  
BANCHETT Series 130 Plano Horiz. 30"x120", latest  
HEALD 25A—Rotary—16" and 30" chuck, hyd., latest  
THOMPSON 12x12x24 Type B Hyd., latest type

**LATHES—Engine & Mfg.**  
AMERICAN 36"x360" centers, 2 carriages, motor dr.  
LODGE & SHIPLEY 14"x30", 10"x30" Centers, latest  
MONARCH 10"x20" centers, Model EE Timken, latest  
MONARCH 12"x30" Centers, 12x54" Centers, Model  
CK, Timken Bearing, latest type  
MONARCH 22"x50" centers, 2 carriages, Timken  
Bearing, Model CM, motor drive  
NILES 30x50" Boring, Timken, latest type  
NILES 60"x55" centers, 2 carr., PRT, latest type  
PRATT & WHITNEY 16"x30" Centers, latest type

**LATHES—Turret**  
BARDONS & OLIVER #5, #7, Timken, latest type  
FORSTER #4FU "Fastomatic", Timken, latest  
GISHOLT #1L, #2L, #3L, Universal, Timken, latest  
GISHOLT #3, #4, Univ., TIMKEN, latest type  
JONES & LAMSON #3, #5 Univ., Timken, latest  
MOREY No. 20, No. 3, No. 4, Timken Bearing, latest  
WARNER & SWASEY #2A Univ., Timken, latest  
WARNER & SWASEY 3A Univ., Timken, latest

**MILLING MACHINES—Plain**  
BROWN & SHARPE 2B, 3B, Timken, latest type  
CINCINNATI 4-36, 3-18 Hydromatic, Simpler, latest  
KEARNEY & TRECKER 1218, 1404, latest type  
KEARNEY & TRECKER 2H, 3H, 4H, 5H, 4E,  
Timken Bearing, latest type

**MILLING MACHINES—Thread**  
LEES-BRADNER Mod. HT 12"x54", Mod. 1/T  
6"x36", latest  
MOREY 12"x30" and 40" centers, latest type

**MILLING MACHINES—Universal**  
BROWN & SHARPE 2A, 3A, Timken, latest type  
KEARNEY & TRECKER 2H, Timken, latest type  
VAN NORMAN #12, #26, #36, Timken, latest type

**MILLING MACHINES—Vertical**  
BROWN & SHARPE 22B, Timken, latest type  
CINCINNATI #2, #4 Dial Type, Timken, latest type  
GORTON #8D, #84D, high speed, latest type  
KEARNEY & TRECKER #2K, #3H, Timken, latest

**PLANERS**  
BETTS (CONSOLIDATED) 84"x92"x16", 4 heads,  
Box Table, Power Rapid Traverse, D.C., M.D.  
BETTS (CONSOLIDATED) 108"x84"x50", 4 heads,  
Box Table, Power Rapid Traverse, D.C., M.D.  
NILES "Time Saver," 42"x42"x14", 3 heads, Rapid  
Traverse A.C. vari-voltage drive, latest  
NILES 108"x84"x42", 4 heads, Power Rapid Traverse,  
Box Table, D.C. reversing motor drive

**SCREW MACHINES—Automatic & Chucking**  
CONOMATIC 2 1/2"—4 spindle, latest type  
GOSS & DeLEEUW 6"x6 1/2" Auto. Chucker, latest  
GOSS & DeLEEUW 8" Auto. Chucker, 5 spn., latest

**MISCELLANEOUS**  
BARNES #172, 206H, 207, 207B Vertical Hono.  
Hydraulic, Self-Oiling, latest type  
CINCINNATI 1-30, 3-30, Duplex Vert. Surface  
Broach, Double ram, Model ER Hyd., latest type  
HENRY & WRIGHT 50 ton Dieing Press, M.D.  
LAKE ERIE 500 ton Vertical Hydraulic Press, latest  
MICHIGAN 1708, 1712 Universal Reliever, latest  
PRATT & WHITNEY "KELLER" Model BL-2416  
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## THE CLEARING HOUSE

NEWS OF USED, REBUILT AND SURPLUS MACHINERY

### Machinery depreciation

policies to be studied by NMTBA and MDNA

### New Haven dealers

report December heavy pickup in sales

### MDNA schedules

board of directors meeting for Jan. 27

## NMTBA-MDNA Plan Report On Accelerated Depreciation Rates

Cleveland—The proposed accelerated depreciation of machine tools is the subject of a statement being prepared for submission to the United States Treasury by Tell Berna, general manager of the National Machine Tool Builders Assn. Mr. Berna is working in cooperation with Jack Fox, executive director of the Machinery Dealers National Association on this vital issue.

Both organizations are pushing for favorable legislation on this proposal in hopes that in the future manufacturing firms may more speedily write off their obsolete equipment. Firms being able to do this will then be in a position to start replacing these obsolete production machines with either new machines or those of a more modern vintage, and thus place themselves in a more favorable competitive position.

The text of this statement will be released by Mr. Berna when its final form is approved for publication.

## Detroit MDNA Meets J.M.P. Fox; Reports Increased Sales Volume

Detroit—J. M. P. Fox, new MDNA executive director, in keeping with his policy of trying to meet as many machinery dealers as is possible, attended the Detroit chapter meeting of the Machinery Dealers National Assn. on Dec. 13 at J. Lee Hackett Machinery Co. Mr. Fox was introduced to the group by Frank Lunney, national president.

Hopes for a prosperous 1950 are being based upon the recent increase in sales volume reported by most Detroit dealers during December.

The next meeting of the Detroit chapter will be held at Robert F. Brown Machinery Co. on Jan. 10, 1950.

## New Haven Business Picks Up During Last Month of the Year

New Haven—Dealers in used and rebuilt machine tools in this city report a pickup in inquiries and sales during December. Some dealers report inquiries as high as 100 pct and sales as high as 50 pct above July activity.

Most dealers could not put a finger on the cause of this activity, but surmised that the plans of some firms for the new year might already be underway.

Dealers in the New Haven area agreed that compared to previous years 1949 was bad. Overall sales volume was reported from 35 to 60 pct off from 1948. The more prophetic operators felt that this year showed a turn to the normalcy of supply and demand that has been absent from the scene for many years, that business would continue along this pattern, and that sales would be obtained only by

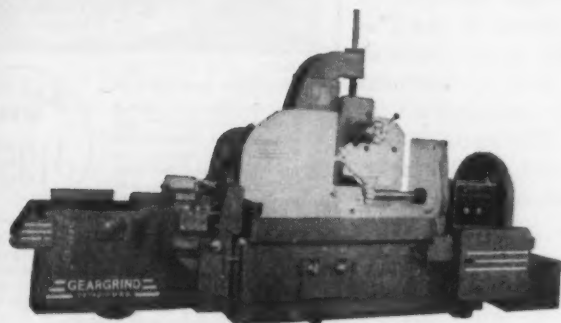
Turn to Page 98

### MDNA CHAPTER MEETINGS

CHAPTER	DATE	TIME	PLACE
Los Angeles	Tues. Dec. 27	6:30 p.m.	Elks Club
Detroit	Tues. Jan. 10	7:00 p.m.	Brown Co.
Chicago	Thurs. Jan. 19	6:30 p.m.	Steak House
Philadelphia	Tues. Jan. 24	6:30 p.m.	Warwick Hotel
New York	Mon. Jan. 30	6:30 p.m.	Cavanagh's

# THE CLEARING HOUSE SIMMONS BEST BUYS

## SEE SIMMONS FOR GEAR GRINDERS

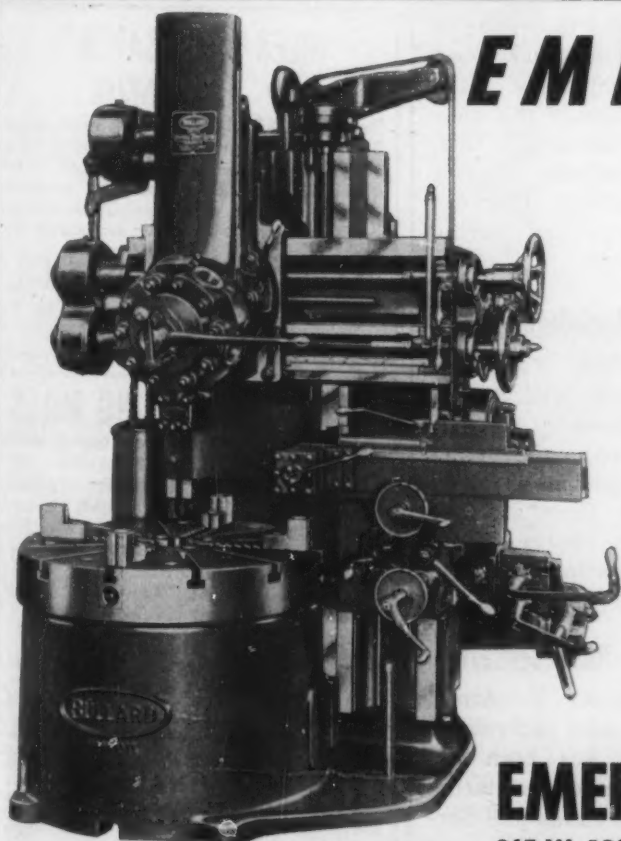


GG-24-48 Gear Grinding Machine Company.  
Gear Grinder with hydraulic drive to grinding wheel carriage, index mechanism and trimmer. Capacity between centers 48". Diameters 2 1/2" to 24" and up to 24" face. Late type.

Write today for a complete stock list of Simmons Engineered-Rebuilt Machine Tools.

## SIMMONS MACHINE TOOL CORPORATION

MAIN OFFICE AND PLANT: 1721 N. BROADWAY, ALBANY, 1, N. Y. • NEW YORK OFFICE: 50 EAST 42ND STREET



42" Bullard V T L. Spiral Drive.  
Used Approx. 19 Months.

## EMERMAN Offers from Stock BULLARDS —LATE TYPE—

42" VTL	Spiral Drive (4)
42" VTL	3-jaw Universal Chuck
36" VTL	Spiral Drive
36" VTL	New Era
24" VTL	Spiral Drive
24" VTL	New Era

**BULLARD MULTIMATIC (Late)**  
**8"—8 spindle MODEL D**  
**POWER CHUCKING—SINGLE OR DOUBLE INDEX**

*YES—these machines can be rented!*

## EMERMAN MACHINERY CORP.

865 W. 120th Street PULLMAN 5-7626 CHICAGO 43, ILL.



## THE CLEARING HOUSE

Continued from Page 94

### BORING MACHINES

2½" No. 25T Giddings & Lewis  
3" No. 3A Universal  
3½" No. 32 Lucas  
5" Jones planer table type  
52" King vertical  
100" Niles-Bement-Pond vertical  
No. 2112 & 1128 Excella precision  
Nos. 42, 47A & 48A Heald Borematic

### DRILLS

20" No. 2 Mfg. Colburn  
20" Cnt. Bick. Super Service Mfg.  
21" Canedy Otto  
21" & 24" Cnt. Bickford  
24" Kokoma  
24" Cnt. Bick. Super Service  
No. 217 Baker 3 spindle  
Nos. 121, 310, 315 & 513 Baker  
No. 30HO Baker  
3" 10" Morris radial  
4" 11" Cnt. Bick. Universal radial  
4" Hammond radial, elbow arm  
6" 15" Dress radial  
16" Allen 6 spindle, No. 2  
24" Demco 4 spindle, No. 3  
24" Foote Burt 6 spdl., No. 2  
24" Allen 4 spdl., type 2K H

### GEAR MACHINERY

Nos. 3 & 12 Barber Colman  
Types A & T Barber Colman  
Nos. 6 & 72 Fellows  
Nos. 8H, 12H, 16HS & 18H Gould & Eberhardt  
Nos. 1, 5A & 5AC Lees Bradner  
No. 130 Cleveland Rigid hobber  
No. 5M Adams Mfg. hobber and spline miller  
3" Gleason spiral bevel gen.  
No. 7 Gleason cutter grinder  
18" Gleason fasters & lappers  
No. 8M Fellows Red Line Checker  
24" Flather auto. spur  
8" 12" Red Ring shaver  
8" Red Ring lappers  
Barnes Hut-O-Lap lappers  
No. 4 Cimatoool rounders

### GRINDERS

6"x18", 10"x18", 10"x36", 10"-14"x72" & 16"x36"  
Norton  
4"x18" 6"x18", 10"x18", 10"x24", 14"x36" &  
16"x72" Landis  
6"x18" & 6"x32" Brown & Sharpe  
Nos. 1, 2 & 13 Brown & Sharpe univ.  
10"x24" Landis universal  
26" No. 226 Gardner disc  
53" No. 372 Besly horiz. disc  
30" No. 230 Hanchett opposed disc  
16" No. 214 Hanchett opposed disc  
15" No. 115 Gardner opposed disc

### LATHES, ENGINE

14"x6" Lodge & Shipley  
16"x6" Monarch  
16"x10" American  
18"x8" Hendey  
18"x8" Rockford  
18"x12" Bradford  
19"x8" Leblond  
20"x8" Lodge & Shipley  
25"x48" centers Leblond  
36"x16" Bridgeford

### LATHES, TURRET

Nos. 2, 3, 4, 1A & 3A Warner Swasey  
No. 7 Bardons & Oliver  
Nos. 2 & 3 Morey  
Nos. 3, 4, 5, 3AL & 28" Gisholt  
6" 2 Denver  
No. 4 Midland  
No. 3 Jones & Lamson  
No. 5 Foster  
3"x36" & 4"x34" Jones & Lamson  
24" & 36" Bullard vertical  
No. 2FU Foster Fastermatic

### PLANERS & SHAPERS

30x24x6" Liberty O.S. planer  
20" & 24" Gemco shapers  
16", 20" & 24" G&E shapers  
24" Columbia Universal shaper  
6" P. & W. vertical shaper

### FORGING TOOLS

2" National Upsetter  
4" Ajax upsetter  
No. 1 Ajax forging roll  
No. 5N Hazel air hammer  
600 ton Hamilton forging press  
¾" Wat. Farrel OD SS cold header

**MILES MACHINERY CO.**  
SAGINAW, MICH.

those who went out after them.

These dealers aren't definitely pessimistic or optimistic. However, they do have a hope that the jump in activity during December is indicative of the trend for 1950.

### MDNA Board Meeting Scheduled

Chicago—The next meeting of the board of directors of the Machinery Dealers National Assn., as announced by MDNA national headquarters, is scheduled for Jan. 27, 1950 in Chicago. Topics to be discussed and decided upon are: (1) The convention. (2) the annual year book, (3) a suggested auction at the convention, (4) the advertising program, (5) determination of standards and ethics.

This will be the last meeting before the 1950 convention, and before the Machine Tool Conference at the Wharton School of Finance.

### Berger Bros. Changes Hands

Rochester—The business, rebuilding facilities, warehouses, and stock of Berger Brothers Electric Motors, Inc., Rochester, formerly owned by I. E. Goldman, Fred W. Kiemle, and the estate of David Berger, has been purchased by four veteran employees of the firm. The new officers of this electrical equipment firm are: J. Clifford Nelson, president; Stanley Fflaum, vice-president; Clarence Lofink, treasurer, and Irving Rockowitz, secretary.

### Falk Announces Appointments

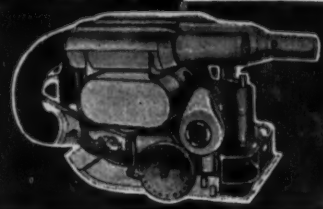
Rochester—Bertram Falk, secretary of the Falk Mill Supply Co., Inc., Rochester, recently announced the appointment of Charles Ross as assistant to the president, Myron Bray as shop superintendent in charge of rebuilding, and Charles Riley as director of advertising.

### Armell Appointed Representative

Pittsburgh—James P. Armell Co., specialists in used and rebuilt overhead cranes, has been appointed Pittsburgh representative for the Milwaukee Crane and Service Co., Milwaukee.

Resume Your Reading on Page 95

## HEAT PORTABLE HEATER SALE!



### 100,000 BTU PORTABLE HEATER and DRYER

Stewart - Warner portable, powerful 100,000 BTU gas oil-burning heaters, with turbine type blowers; 1½ hp. air-cooled, ball-bearing engine; 3 ducts (45-ft. total). IMMEDIATE DELIVERY.

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3" bar UNIVERSAL "TRI-WAY" Horizontal, standard machine, 1942.

### HAZARD BROWNELL MACHINE TOOLS, INC.

350 Waterman St. Providence, R. I.

No. 1 W & S Electric Head Turret Lathes. Marvel No. 9A Hack Saw, gear box.  
No. 2 Norton Tool & Cutter Grinder, 1940.  
South Bend 14" x 6' Toolroom Lathe, 1947.

D. E. DONY MACHINERY CO.  
47 LAURELTON ROAD, ROCHESTER 9, N. Y.





Continued from Page 24

In the heart of French iron and steel production, where is located three-quarters of the French iron and steel capacity, nine of the French steel companies have pooled their resources and knowledge in order to make what is probably the greatest single contribution to French industrial recovery and development of exports.

#### Financing Is Arranged

Cost of the project will amount to \$133 million, of which \$49.3 million will come from ECA funds for purchase of American machinery and equipment. The rest, or \$83.7 million, will be allocated in French francs as counterpart of the ECA funds to cover costs of manpower, and purchase of materials in France.

The plans will be executed in two steps. In the first which will be finished in 1951, one hot-strip mill and two cold-rolling mills will be built at Ebange. The hot-strip mill will have a capacity estimated at 700,000 to 850,000 tons of 80-in. coils. One of the cold-rolling mills will produce 250,000 tons a year. The tinplate mill will have a capacity of 350,000 tons of sheets and tinplate.

The second step, to be achieved in 1952, will include an 84-oven coking plant, a steelworks with 3 basic converters of 350,000 tons capacity and 2 openhearth of 150,000 tons annual capacity. Combined with existing capacity, the output will reach a million tons a year. Pig iron output will be increased from 670,000 tons to 800,000 tons by rebuilding 3 of 7 blast furnaces.

#### Brazil Boosts Electric Power

Sao Paulo—The hydro-electric station at the Paulo Afonso Falls, on the San Francisco River, now under construction, will have an initial capacity of 112,000 kw, and will supply current to parts of 5 North-Eastern States within a radius of 240 miles of the falls.

The International Bank for Reconstruction and Development is advancing \$15 million, or half the estimated cost of the work, to finance imports of materials from the United States. The Minas Geraes state government is building a station with a potential of 80,000 hp at Pilaes, to be completed in 1950; another at Fecho do Funil, and a third on the Santo Antonio River.

Resume Your Reading on Page 25



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## ADVERTISERS IN THIS ISSUE

<b>A</b>		Electric Equipment Co. ....	100
Aaron Machinery Co., Inc. ....	99	Emerman Machinery Corp. ....	97
Accurate Spring Mfg. Co. ....	18	Espan-Lucas Machine Works, The. ....	103
Albert & Davidson Pipe Corp. ....	101		
Allegheny Ludlum Steel Corp. ....	60	<b>F</b>	
Allis-Chalmers Mfg. Co. ....	5	Federal Products Corp. ....	91
American Air Compressor Corp. ....	99	Fellows Gear Shaper Co., The ....	104
American Brass Co., The ....	92	Foster, Frank B., Inc. ....	96
American Magnesium Corp. ....	13	Foster, L. B., Co. ....	102
Amgears, Inc. ....	88	Frank, M. K. ....	101
Armel, James P. ....	100		
<b>B</b>			
B & M Manufacturing Co. ....	105	<b>G</b>	
Basic Refractories, Inc. ....	14	General Electric Co., Apparatus Dept. ....	12, 23
Bauer, L. W. ....	102	Gisholt Machine Co. ....	27
Belyea Co., Inc. ....	100	Goodman Electric Machinery Co. ....	100
Benkart Steel & Supply Co. ....	100	Goodrich, B. F., Co., The, Industrial & General Products Div. ....	4
Bernstein Bros. Machinery Corp. ....	98	Goss & DeLeeuw Machine Co. ....	92
Bethlehem Steel Co. ....	1	Gould Storage Battery Corp. ....	17
Bixby, R. W., Inc. ....	102	Griffin Manufacturing Co. ....	72
Boiardi Steel Corp. ....	104		
Boiler Engineering & Supply Co., Inc. ....	92	<b>H</b>	
Boynton, A. J., & Co. ....	93	H and P Die & Stamping Co., The ....	103
Brownell, Hazard Machine Tools, Inc. ....	96	Hawkins & Co. ....	101
Browning, Victor R., & Co., Inc. ....	93	Hayward Company, The ....	92
Builders Steel Supply Co. ....	102	Hindley Manufacturing Co. ....	93
		Hughes, Arnold, Co. ....	101
<b>C</b>		Hy-Alloy Steels Co. ....	89
Cattie, Joseph P., & Bros. ....	105	Hyman, Joseph, & Sons ....	99
Champion Electric Motor Co. ....	100		
Chicago Freight Car & Parts Co. ....	101	<b>I</b>	
Cleveland Crane & Engineering Co., The Steelweld Machinery Division ....	16	Inland Steel Co. ....	42
Cleveland Steel Tool Co., The ....	92	Iron & Steel Products, Inc. ....	96
Cleveland Worm & Gear Co., The Inside Front Cover			
Crawford, F. H., & Co., Inc. ....	96		
<b>D</b>		<b>J</b>	
Diamond Manufacturing Co. ....	93	Jennings, Jira Thayer ....	102
Doehler-Jarvis Corp., Doehler Die Casting Div. ....	37		
Donahue Steel Products Co., Inc. ....	96	<b>K</b>	
Dony, D. E., Machinery Co. ....	98	K. & H. Salvage Co. ....	96
Dreis & Krump Mfg. Co. ....	92	Kaiser Steel Corp. ....	22
Dullen Steel Products, Inc. ....	102	Kelly & Co. ....	100
		Keystone Steel & Wire Co. ....	66
<b>E</b>		Keywell, Samuel G., Co., Inc., The ....	79
Eastern Machine Screw Corp., The ....	103	Knox, Earl E., Co. ....	99
Eastern Machinery Co., The ....	99	Krasilovsky, Mike, Inc. ....	101

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